(CABLE DATA)

ANRITSU

VIDEO SIGNAL ANALYZER #MS349 D/E

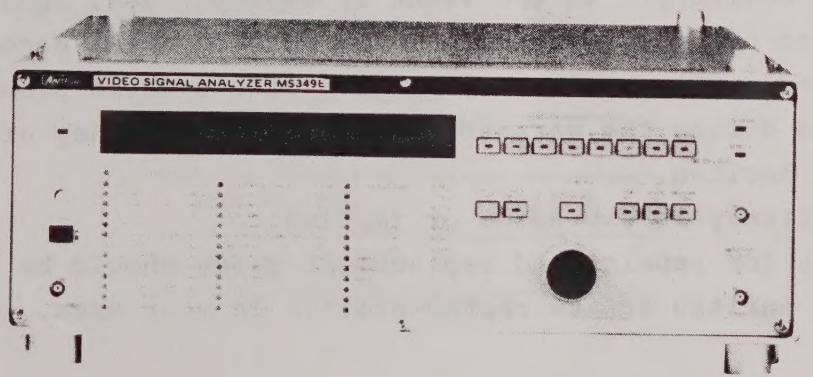
MP MASTER

MA35869

SERVICE MANUAL

VIDEO SIGNAL ANALYZER

MS349D/E



ANRITSU CORP.

1986.12 x 100 NV-6(Y)
Printed in Japan

CERTIFICATION

ANRITSU CORP. certifies that this instrument has been thoroughly tested and inspected, and found to meet published specifications prior to shipping.
Anritsu further certifies that its calibration measurements are based on the Japanese Electrotechnical Laboratory and Radio Research Laboratory standards.

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Note:

1. The instrument is operable on a nominal voltage of 100 to 127 Vac or 200 to 250 Vac by changing the connections on the power transformer taps.

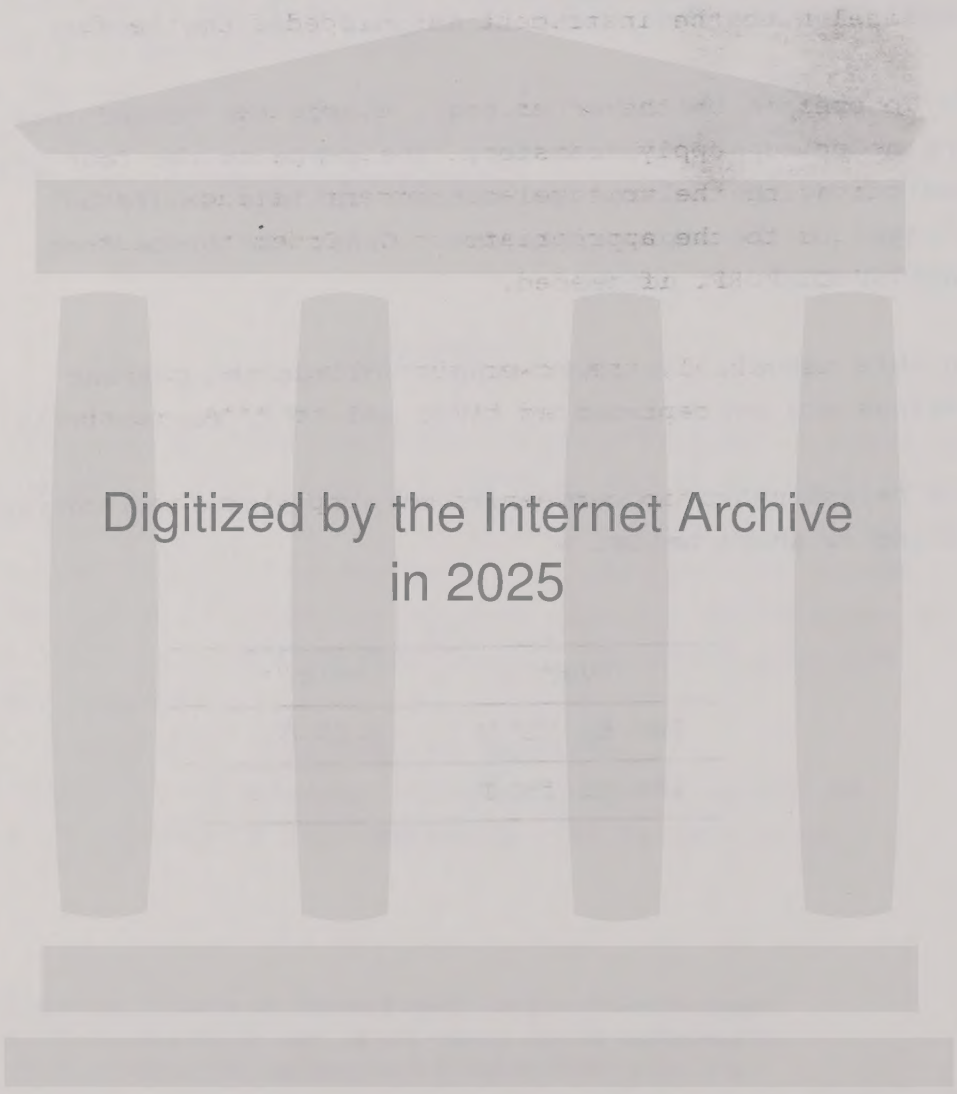
   The voltage and current ratings are indicated on the rear panel when the instrument is shipped from the factory.

   To operate on the other voltage, change the connections on the power supply transformer. The plate on the rear panel indicating the voltage and current ratings should be changed to the appropriate one. Order the plate from ANRITSU CORP. if needed.

2. In this manual, the power supply voltage and current ratings are represented by **Vac and ***A, respectively.

3. The relationship between power supply voltage and current rating is shown below.

**Vac	***A
100 to 127 V	3.15 A
200 to 250 V	2 A



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SECTION 1

GENERAL INFORMATION

1.1 Introduction

This manual contains service information for maintaining the VIDEO SIGNAL ANALYZER MS349D/E. It includes a description of circuit functions, disassemble, adjustments, troubleshooting and repairs techniques.

1.2 Periodic Maintenance

This test equipment is designed for continuous troublefree performance. However, some problems may occur due to stress and changes in operating conditions. To use the MS349D/E in its initial condition, periodic maintenance checks are required. If any problems occur, repair them as described in this Service Manual or contact the nearest ANRITSU service department.

1.3 Ordering Repair Parts

Parts required for repair should be ordered as described in Section 7.2.

1.4 Specifications

Table 1-1 lists the specifications of this test equipment.

Table 1-1 Specifications

Input level range			0.5Vp-p to 2Vp-p				
Input impedance			75 ohm unbalanced		Return loss: ≥40dB (50Hz to 6MHz)		
Model					MS349C/D/E (Standard)		MS349D1/E1 (For VTR recommended)
Measurement Item			Measuring Range	Display Resolution	Accuracy ITS	Accuracy F. Field	Accuracy F. Field
Luminance bar amplitude		MS349D/C (NTSC•PAL/M)	50-200IRE	0.1IRE		±0.5IRE	±0.5IRE
		MS349E (PAL•SECAM)	0.35-1.4Vp-p	0.001V		±0.004V	±0.004V
Luminance bar amplitude error			-50 to +99.9%	0.1%		±0.5%	±0.5%
Rise time			0.1 to 1μs	1ns		±5ns	±5ns
Overshoot			0 to 40%	0.1%		±0.5%	±0.5%
Bar tilt			±40	0.1%		±0.5%	±0.5%
Baseline distortion			±30%	0.1%		±0.5%	±0.5%
2T pulse/bar error			±40%	0.1%		±0.5%	±0.5%
Kp			0 to 10%	0.1%		±0.5%	±0.5%
Luminance/chrominance gain inequality			±40%	0.1%		±0.5%	±0.5%
Luminance/chrominance delay inequality			±500ns	1ns		±5ns	±5ns
Luminance non-linearity			0 to 50%	0.1%		±0.5%	±0.5%
Differential gain			±40%	0.01%	0.5%	0.1%	0.1%
Differential phase			±40deg.	0.01deg.	0.5deg.	0.1deg.	0.1deg.
Chrominance/luminance intermodulation			±40%	0.1%		±0.5%	±0.5%
Chrominance amplitude non-linearity			±40%	0.1%		±1.5%	±1.5%
Chrominance phase non-linearity			±40deg.	0.1deg.		±0.5deg.	±0.5deg.
Signal-to-random noise ratio weight			75 to 22dB	0.1dB		±0.5dB	———
Signal-to-random noise ratio unweight			72 to 22dB	0.1dB		±0.5dB	———
Signal-to-chrominance periodic noise ratio			56 to 30dB	0.1dB		±1dB	±1dB
Low frequency errors			0 to 15%	0.1%		±1%	±1%
Sync. amplitude error			±40%	0.1%		±1%	±1%
Chrominance reference amplitude error			±40%	0.1%		±1%	±1%
Gain/frequency characteristic (Multiburst method)			±6dB	0.1dB		±0.2dB	±0.2dB
Color burst amplitude error			±40%	0.1%		±1%	±1%
Field time distortion		*	±40%	0.1%	———	±0.5%	±0.5%
Long time distortion overshoot		*	0 to 50%	0.1%	———	±1%	±1%
Long time distortion decayed time		*	0 to 10sec.	0.1sec.	———	±0.1sec.	±0.1sec.
Long time distortion slope		*	0-0.7V/sec.	0.001V/sec.	———	±0.001V/sec.	±0.01V/sec.
Sync transient		*	0 to 50%	0.1%	———	±1%	±1%
Color bar error	Amplitude	*	±20%	0.1%	———	±1%	±1%
	Phase	*	±20deg.	0.1deg.	———	±1deg.	±1deg.
Video noise, weight/ unweight for each subcarrier trap ON/OFF	Weight		75 to 22dB	0.1dB	———	———	±0.5dB
	Unweight		72 to 22dB				
Color noise	AM		65 to 30dB	0.1dB	———	———	±0.5dB
	PM		65 to 30dB	0.1dB	———	———	±0.5dB
Timing			0.1 to 20μs	0.01μs		0.01μs	±0.01μs
Power				≤160VA			
Dimensions and weight				145H, 426W, 450Dmm, <16kg			

*: Measurement is impossible in case of ITS measurement mode.

SECTION 2

CIRCUIT DESCRIPTION

2.1 Introduction

The design and operations of this video signal analyzer are shown in Fig. 2-1.

- o This instrument is controlled by the CPU.
- o The measurement routes are established in the units of the measured items.
- o The input waveforms are sampled after analog processing.
- o Data is only taken from the sampling point specified beforehand by the measurement item. (Refer to the Operation Manual.)
- o In wave mode, one line contains 6400 points of data. This is because one line has a total of 128 lines of data taken by 10 ns shifts from 50 points per line samplings.
- o A 50 MHz signal is reproduced by test signal SYNC, and timings for samples and gates are determined by this 50 MHz signal.

2.2 Description of PC Boards

The following describes each PC board in Fig. 2-1 (MS349D/E SCHEMATIC DIAGRAM).

2.2.1 Z1 D/A BOARD

This PC board converts the digital waveform data to analog waveform data with a D/A converter. It sends this data from the MONITOR OUTPUT X, Y and RECORDER OUTPUT X, Y.

2.2.2 Z2 CONTROL BOARD II

This PC board supports a wave memory and GP-IB or a RS-232C control function.

2.2.3 Z3 CONTROL BOARD I

This PC board contains a Z80 CPU with its program written into ROMs. It controls the MS349D/E and performs data operations.

2.2.4 Z4 I/O BOARD I

This PC board improves the S/N of the measured and waveform data and sends the data to the bus line.

2.2.5 Z5 I/O BOARD II

This PC board produces analog control signals with a timing clock locked on a synchronous signal from the bus line data and Z8 50 MHz CLOCK BOARD. It also produces analog check signals.

2.2.6 Z6 ANALOG BOARD I

This PC board analogically processes the input video signals from each measured item and sends them to ANALOG BOARD II.

It also separates the synchronous signal from the video signals and sends it to the 50 MHz CLOCK BOARD.

2.2.7 Z7 ANALOG BOARD II

This PC board performs analog processing for Deffrential Gain and Phase items. It also performs A/D conversion of analog signals that have passed through the specified route, and that signals include from the Z6 ANALOG BOARD I.

2.2.8 Z8 50 MHz CLOCK BOARD

This PC board contains a PLL circuit which locks the 50 MHz clock with the synchronous signals separated from the video signals. It also generates the sampling clock and other timing clocks.

2.2.9 Z9 POWER BOARD

This PC board outputs DC voltages of ±15, ±12 and +5 from the AC power supply.

2.2.10 Z10 MOTHER BOARD

This is the mother PC board for the Z1 to Z9 boards.

2.2.11 Z11 LIMIT BOARD

Using 44 DIP switches, this PC board sets limit data performance to ON/OFF for each measured item.

2.2.12 Z12 LED BOARD

This board sends the operation setting data from the front panel to the CPU, and displays data instructed by the CPU.

2.2.13 Z13 CONNECTOR BOARD

This is the interface PC board for GP-IB or RS-232C.

Table 2-1 Route setting for measurement items

o Mark: ON, No Mark: OFF

Measuring items	Switch No.																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
BAR AMPL. ERR: RISE TIME, OVER SHOOT: BAR TILT: TIMING	o						o														
BASE-LINE DIST		o					o														
C/L Gain Delay (LUM)	o									o	o										
C/L Gain Delay (CHROM)	o								o		o										
L NON-LINEAR							o											o			
DG													o		o		o				
DP																o	o				
C/L INTERMOD		o					o														
C NON-LINEAR (PHASE)																o	o				
C NON-LINEAR (AMPL)	o								o		o										
S/N UNWEIGHT	o		o																		
S/N WEIGHT	o			o																	
S/C PERIODIC NOISE						o			o		o										
LOW FREQ ERR					o		o														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

Table 2-1 Route setting for measurement items (Cont'd)

o Mark: ON, No Mark: OFF

Measuring items	Switch No.																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
SYNC AMPL ERR		o					o														
C REF AMPL ERR COLOR BURST AMPL ERR	o								o		o										
MULTIBURST	o											o									
FIELD TIME		o					o														
LONG TIME		o						o													
COLOR BAR (PHASE)													o			o	o				
COLOR BAR (AMPL)	o								o		o										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

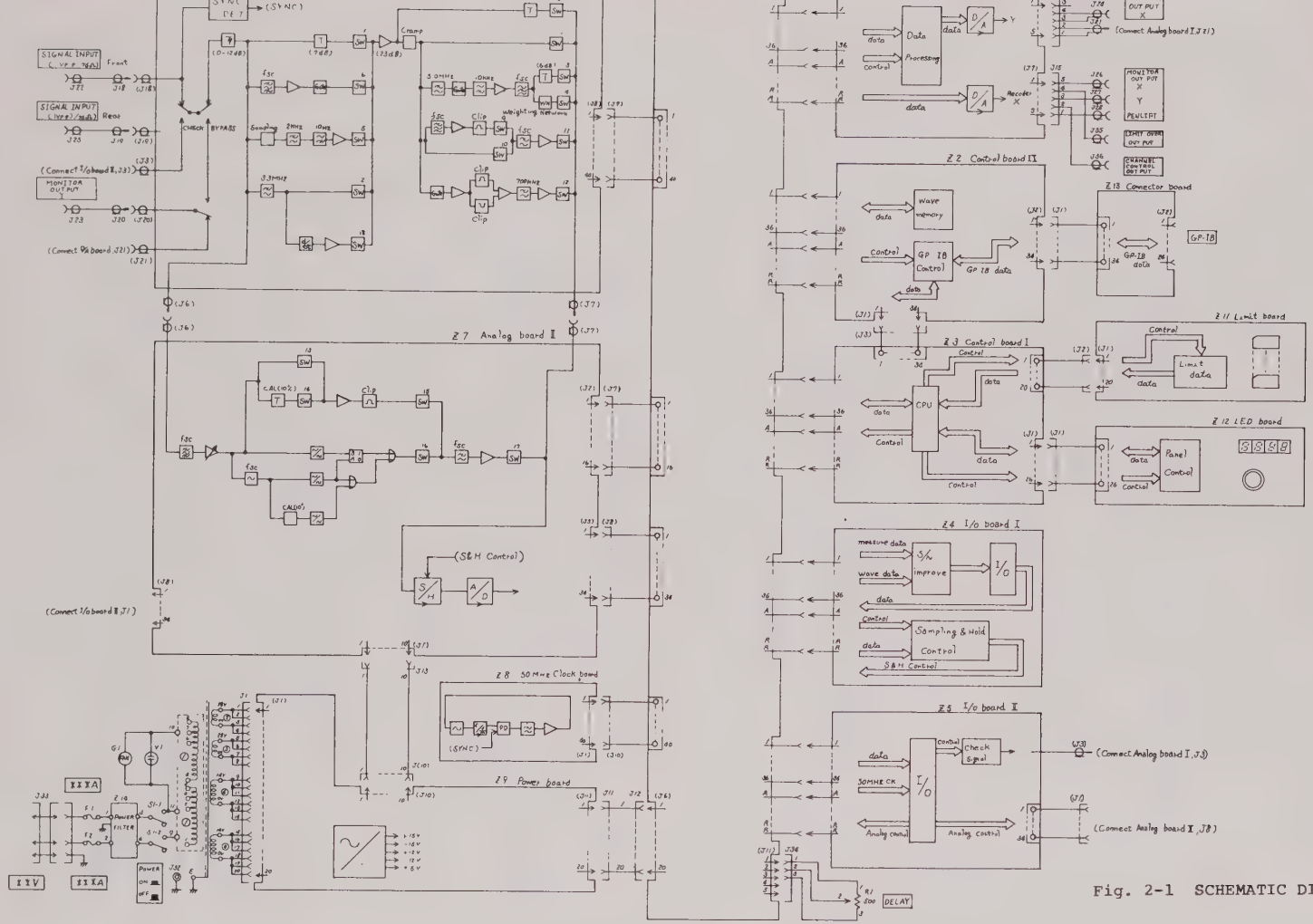


Fig. 2-1 SCHEMATIC DIAGRAM OF MS349D/E

SECTION 3

ADJUSTMENT

3.1 Introduction

This section describes the methods for calibrating the measurement functions. Set the transmission and receiving parts as described in Section 3.2. Check that a generator and other test equipment are properly calibrated. See Table 3-2 on the test waveforms for each item.

3.2 Setup

3.2.1 Setting a generator

- When tests are made in full field mode, set the generator to full field mode. When tests are made in ITS mode, set it to ITS mode.
- If the generator has APL in its waveform, set the generator at 50% repeat.
- Set the subcarrier phase against the U axis at 180° for NTSC and 60° for PAL.
- Calibrate the output level to 1 V P-P, and then calibrate the SYNC, BAR and stair-step levels.
- Set ANRITSU MG311[ ] to non-span mode.

3.2.2 Setting the MS349 D/E

- When tests are made in full field mode, set the MS349D/E to full field mode. When tests are made in ITS mode, set it to ITS mode.
- Set the limit PC board to take measurements for all measurement items, and see Section 6 in Chapter II in Operation Manual for setting the other items.

3.3 Adjustment Method

The following are descriptions for each item to be adjusted.

3.3.1 BAR AMPL

(1) Connect the transmission part directly to the MS349D/E.

(2) Send a 0 dB (1 V P-P) test waveform from the transmission part, and measure the BAR AMPL in single item measure mode.

(3) Adjust the R153 on the PC board Z6 so the test result does not exceed 100 IRE±0.5IRE (700±4 mV for PAL). Confirm that waveform of Z7 TP12 is the same as Fig. 5-1 when this adjustment is done. DC offset is adjusted with R337 on the PC board Z6.

3.3.2 C REF AMPL ERR

(1) Connect the transmission part directly to MS349D/E.

(2) Send a test waveform from the transmission part, and measure the C REF AMPL ERR in single item measure mode.

(3) Adjust R219 so the test result does not exceed 0.0%±0.5%.

3.3.3 C/L GAIN, DELAY

(1) Connect the transmission part directly to MS349D/E.

(2) Send a test waveform from the transmission part, and measure the C/L GAIN and DELAY in single item measure mode.

(3) Adjust R202 on the PC board Z6 so the C/L GAIN test result becomes 0.0±0.5%.

Then adjust L24 on the PC board Z6 so C/L DELAY does not exceed 0±5 ns.

3.3.4 L NON-LINEAR

(1) Connect the transmission part directly to MS349D/E.

(2) Send a test waveform from the transmission part, and measure the L NON-LINEAR in single item measure mode.

(3) Adjust L41 to L47 on the PC board Z6, so the test result becomes 0.0±0.5%.

3.3.5 S/N UNWEIGHT

(1) Send the signal calibrated to S/N 30 dB (described in Fig. 3-1) and measure the S/N UNWEIGHT in single item measure mode.

(2) Adjust R116 on the PC board Z6 so the test result becomes 30.0±0.5 dB.

(3) Calibrate S/N ratio to 60 dB, and measure the S/N UNWEIGHT.

(4) Adjust R341 on the PC board Z6 so the test result becomes 60.0±0.5 dB.

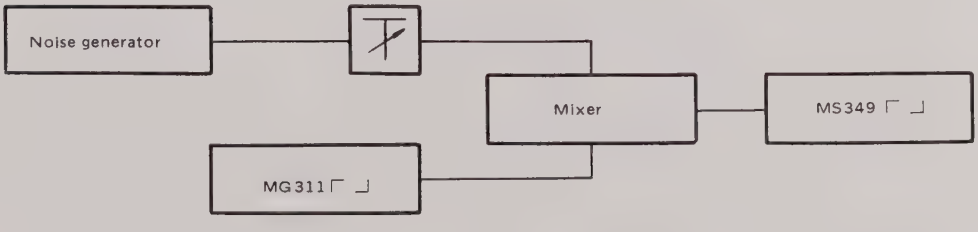


Fig. 3-1

3.3.6 LOW FREQ ERR

(1) Send the signal whose LOW FREQ ERR was calibrated to 7.5% in Fig. 3-2 and measure the LOW FREQ ERR in single item measure mode.

(2) Adjust R142 on the PC board Z6 so the test result becomes 7.5±1%.

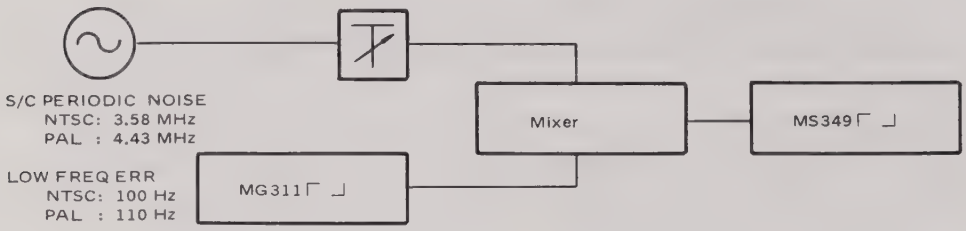


Fig. 3-2

3.3.7 DG

Figure 3-3 shows how to make 10% calibration for DG.

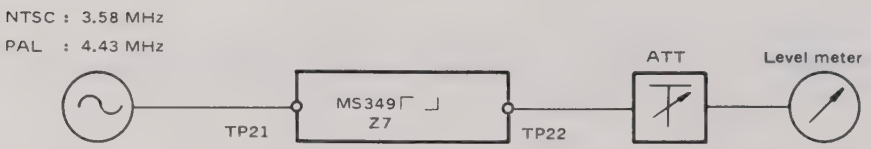


Fig. 3-3

(1) Turn OFF the MS349D/E power.

(2) Open the 30-31 and 32-33 jumper pins on the Z7 analog board II and disconnect the J8 cable.

(3) Connect the equipment as shown in Fig. 3-3.

(4) Set number 3 of Q96 and Q97 on the Z7 analog boards II to HIGH and number 1 of Q96 and Q97 to LOW, and turn the power supply ON.

(5) Adjust ATT as shown in Fig. 3-3, and read the level meter.

(6) Next, set number 3 of Q96 and Q97 to LOW and number 1 to HIGH, and adjust R26 so the difference is 0.9 dB.

3.3.8 DP

Figure 3-4 shows how to make a 10° calibration for DP.

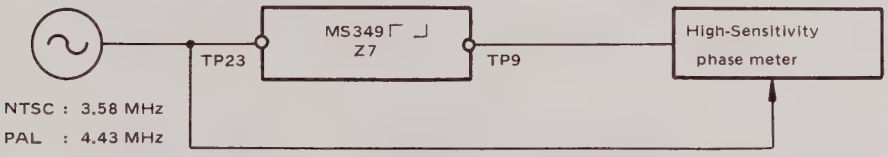


Fig. 3-4

(1) Turn OFF the MS349D/E power.

(2) Open the 8-9 and 25-26 jumper pins on the Z7 analog board II, and connect the 27-28, 10-11, 22-24 and 16-18 jumper pins. These connections are used for the reference level of 0°.

(3) Connect the equipment as shown in Fig. 3-4, and adjust the -10° and -100° calibrations by turning ON the power supply as specified in Table 3-1.

Table 3-1

Phase	Jumper pins to be connected	Location of adjustment
0°	27-28, 10-11, 22-24, 16-18	Reference level
-10°	13-15, 27-29, 16-17, 10-12, 22-24	L17
-100°	13-14, 27-29, 16-17, 10-12, 22-24	L24

3.3.9 S/C PERIODIC NOISE

(1) Send the signal whose S/C PERIODIC NOISE was calibrated to 40 dB in Fig. 3-2. Measure the S/C PERIODIC NOISE in the single item measure mode.

(2) Adjust R59 so the measurement result is 40.0±1 dB

3.3.10 RISE TIME, OVERSHOOT, BAR TILT, BASE-LINE DIST, KP, 2T/BAR RATIO ERR, C/L INTERMOD, SYNC AMPL ERR, FIELD TIME, LONG TIME, and TIMING

(1) This adjustment is made simultaneously with the adjustments described in Section 3.3.1.

3.3.11 COLOR BURST AMPL ERR, C NON-LINEAR (AMPL), COLOR BAR (AMPL)

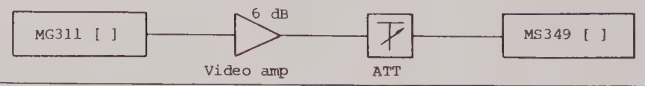
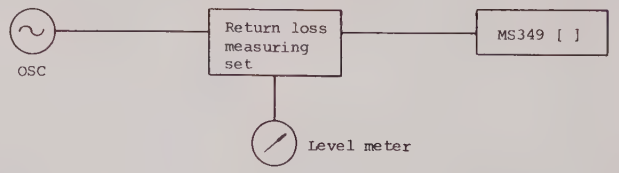
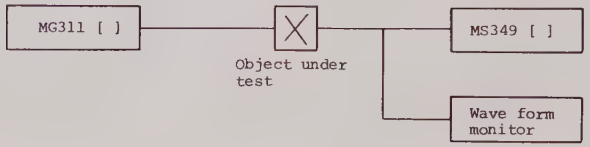
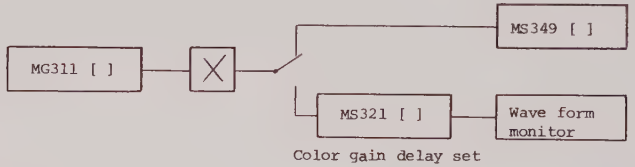
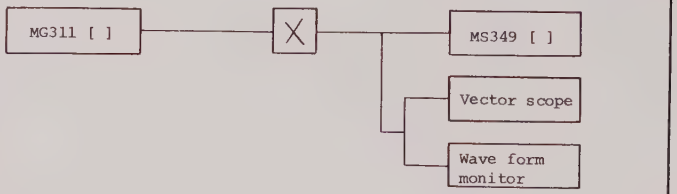
(1) This adjustment is made simultaneously with the adjustments described in Section 3.3.2.

3.3.12 C NON-LINEAR (PHASE), COLOR BAR (PHASE)

(1) This adjustment is made simultaneously with the adjustments described in Section 3.3.8.

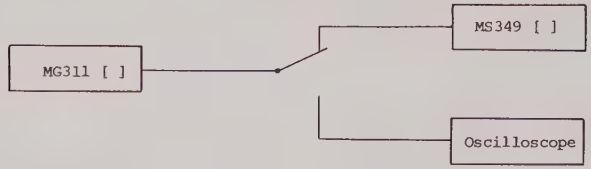
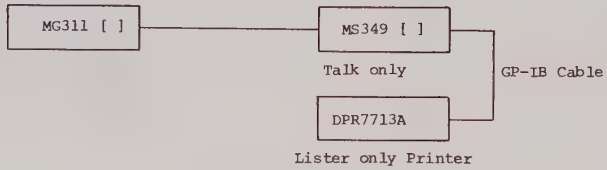
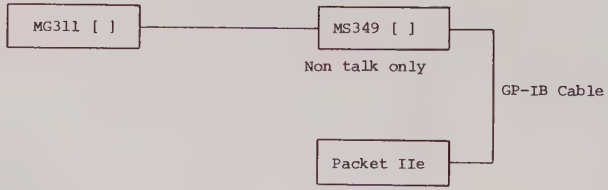
3.3.13 MULTIBURST

(1) No specific adjustment can be made.

No.	CHECK ITEM	Measuring range	Accuracy	Test Signal	CHECK METHOD
3-4	Input level range	0.5 Vp-p to 2 Vp-p		NTSC / PAL	
3-5	Input impedance	75 Ω unbalanced Return loss: ≥ 40 dB (50 Hz to 6 MHz)			
3-6	BAR AMPL	50 to 200 IRE 350 to 1400 mV	±0.5 IRE ±4 mV	NTSC / PAL	
	BAR AMPL ERR	-50 to +99.9%	±0.5%		
	RISE TIME	100 to 500 ns	±5 ns		
	OVERSHOOT	0 to 40%	±0.5%		
	BAR TILT	±40%	±0.5%		
	BASE LINE DIST	±30%	±0.5%		
	KP	0 to 10%	±0.5%		
	2T/BAR RATIO ERR	±40%	±0.5%		
3-7	C/L GAIN	±40%	±0.5%	NTSC / PAL	
	C/L DELAY	±500 ns	±5 ns		
	C/L INTER MOD	±40%	±0.5%	NTSC / PAL	
3-8	C NON-LINEAR (AMPL)	+40%	+1.5%	NTSC / PAL	
	C NON-LINEAR (PHASE)	±40 deg.	±0.5 deg.		
	D G	±40%	(ITS) ±0.5% (F.F) ±0.1%	NTSC / PAL	
	D P	±40 deg.	(ITS) +0.5 deg. (F.F) ±0.1 deg.		
	L NON-LINEAR	0 to 50%	±0.5%	NTSC / PAL	

NO.	CHECK ITEM	SPEC Measuring range	SPEC Accuracy	TEST Signal	CHECK METHOD
3-9	○ S/N UNWEIGHT•WEIGHT	75 ∿ 22 dB	±0.5 dB	NTSC PAL	Noise generator → Mixer ← MG311[ ]; Mixer → MS349[ ]
3-10	S/C PERIODIC NOISE ○ LOW FREQ ERR	56 ∿ 30 dB 0 ∿ 15%	±1 dB	NTSC PAL	S/C PERIODIC NOISE NTSC: 3.58 MHz PAL : 4.43 MHz LOW FREQ ERR NTSC: 100 Hz PAL : 110 Hz Mixer ← MG311[ ]; Mixer → MS349[ ]
3-11	SYNC AMPL ERR	±40%	±1%	NTSC PAL	MG311[ ] → MS349[ ]; → Wave form monitor
	COLOR BURST AMPL ERR	±40%	±1%		
	○ C REF AMPL ERR	±40%	±1%	NTSC PAL	
	MULTIBURST	±6 dB	±0.2 dB	NTSC PAL	
	FIELD MULTIBURST	±6 dB	±0.2 dB	Field multiburst	
	FIELD TIME	±40%	±0.5%		
	LT OVERSHOOT	0 ∿ 50%	±1%	1∿10S 1∿10S APL 12.5% APL 87.5%	
	DECAYED T	0 ∿ 10 sec	±0.1 Sec		
	SLOPE	0 ∿ 0.7 V/Sec	±0.01 V/Sec		
	SYNC TRANSIENT	0 ∿ 50%	±1%		
3-12	COLOR BAR ERR (AMPL)	±20%	±1%		MG311[ ] → MS349[ ]; → Vector scope
	COLOR BAR ERR (PHASE)	±20 deg	1 deg		

Table 3-1-2 (cont.)

No.	CHECK ITEM	SPEC Measuring range	SPEC Accuracy	Test Signal	CHECK METHOD
3-13	TIMING	0.1 to 20 µS	0.01 µS	Line 52 µ	
3-14	Talk only Function				
3-15	GP-IB or RS-232C Function				

SECTION 4

DISASSEMBLY

4.1 Introduction

This section describes how to disassemble the MS349D/E.

4.2 Removing the Bottom Cover

- Unscrew the four screws (#1 to #4)

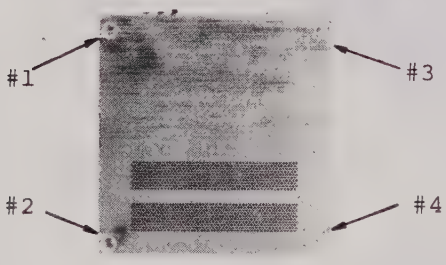


Fig. 4-1

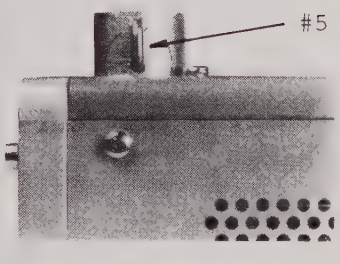


Fig. 4-2

- Turn the four claws #5 attached to the four legs of the MS349D/E to the perpendicular position, and remove the bottom cover.

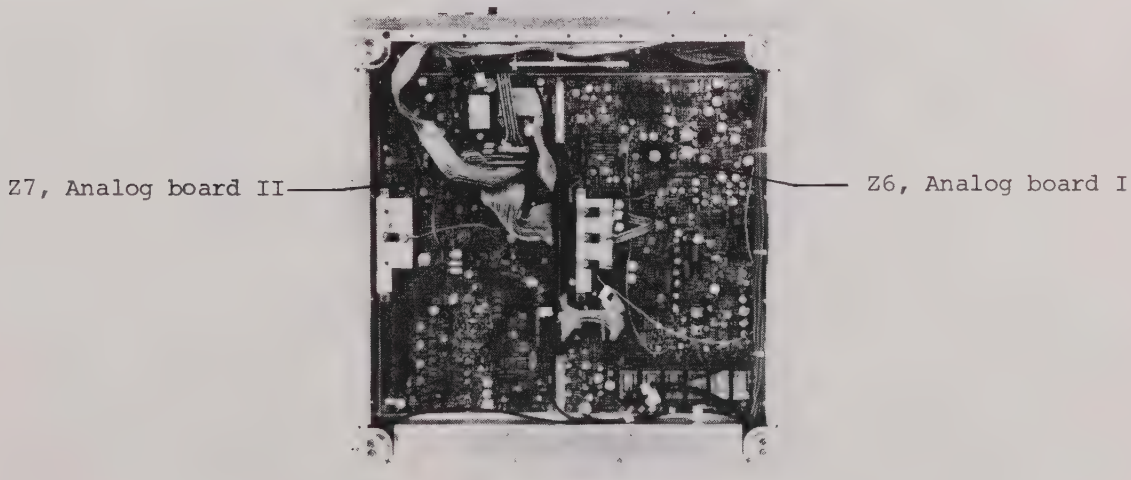


Fig. 4-3

4.3 Removing the Top Cover

- Unscrew the two screws #6 and #7, and remove the cover #8 for the Z11 limit board.

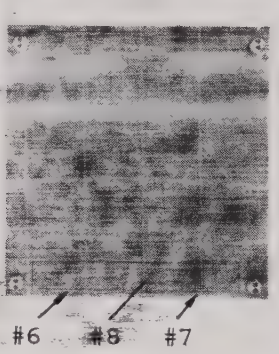


Fig. 4-4

- Unscrew the four screws, #9 to #12, and remove the top cover.

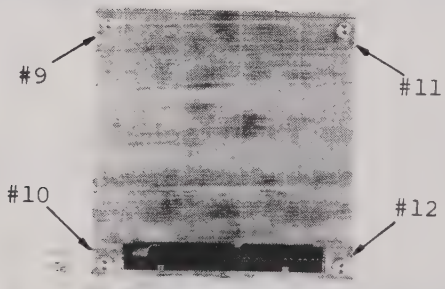


Fig. 4-5

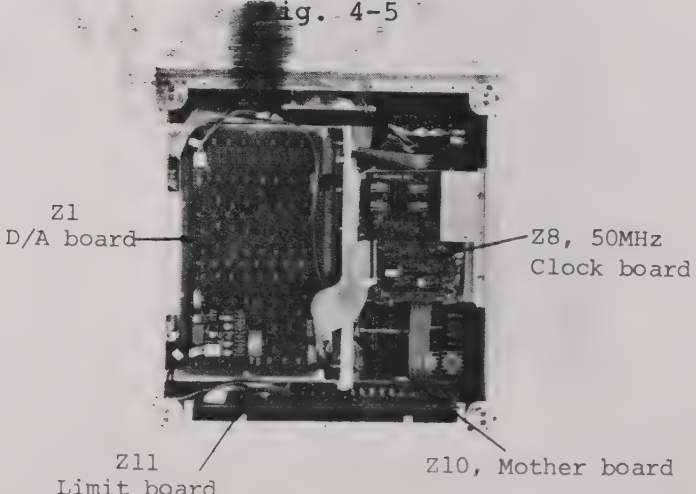


Fig. 4-6

4.4 Removing the Side Covers

- Loosen the two bottom cover screws, and unscrew the four screws, #13 to #16.

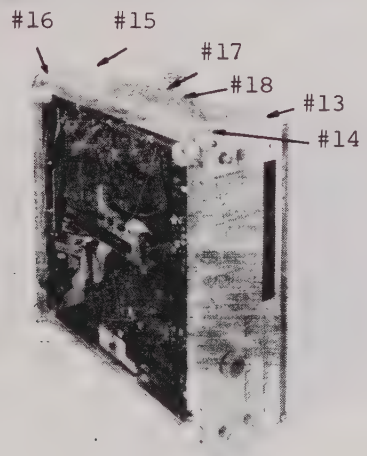


Fig. 4-7

- Slide knob #17 downward, and remove the plate from the top by pulling up on the handle #18.

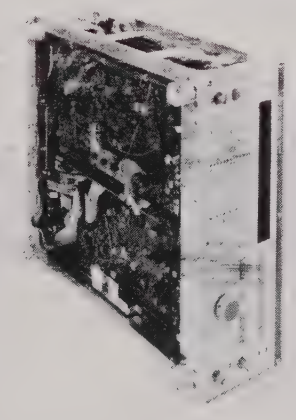


Fig. 4-8

- The side cover on the opposite side can be removed in the same way.

4.5 Dismounting Z1 to Z5 and Mounting the Extension Board

- Remove the left side cover as explained in Section 4.4, and remove the two PC board retainers #19 and #20 by unscrewing the two retaining screws (#21 to #24).

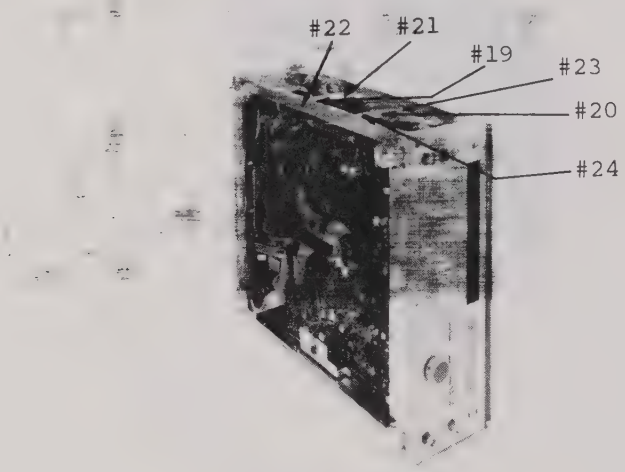


Fig. 4-9

- Remove the top cover when dismounting Z1 and the bottom plate when dismounting Z5.

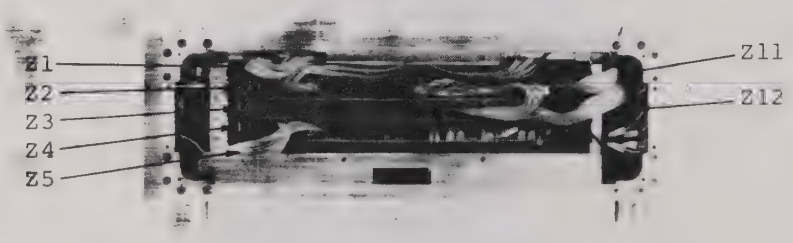


Fig. 4-10

- Disconnect the cable from a PC board being checked. Pull the PC board from the mother board and insert an extension board (Fig. 4-12) in its place. Then, insert the PC board over the extension board.

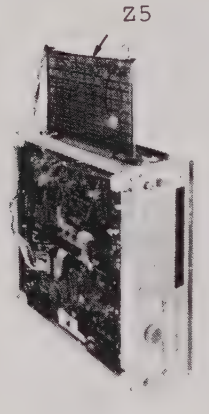


Fig. 4-11

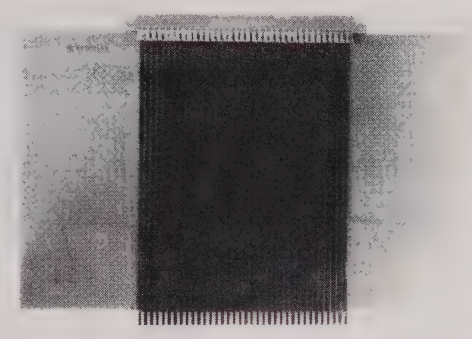


Fig. 4-12

4.6 Dismounting the Z8 50 MHz Clock Board

- Remove the top cover as explained in Section 4.3, and disconnect connector #25. Unscrew the four screws #26 to #29 and dismount Z8.

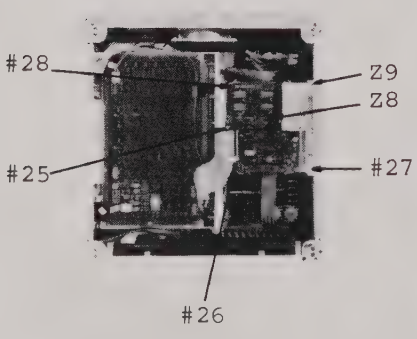


Fig. 4-13

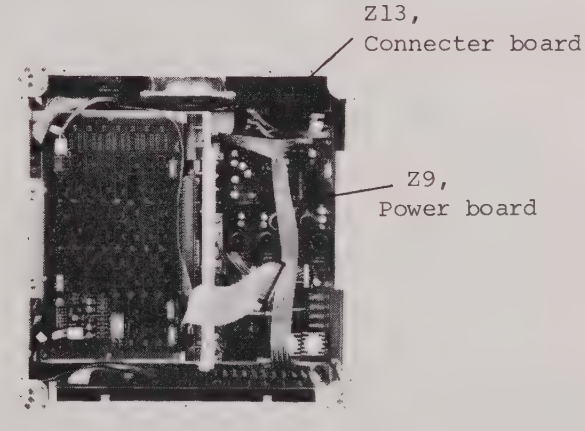


Fig. 4-14

4.7 Removing the Front Panel

- Loosen the two knob #30 screws and remove the knob. Remove the front panel by unscrewing the six screws #31 to #36.

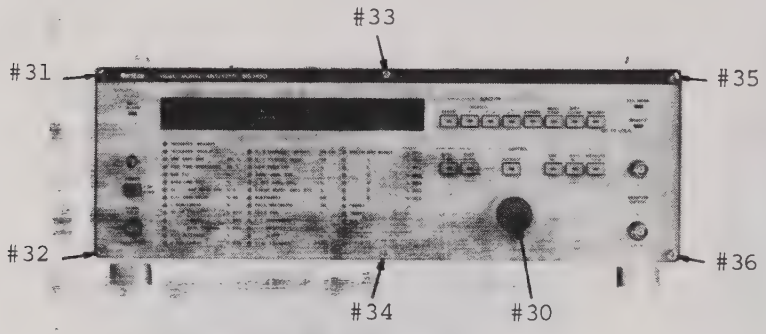


Fig. 4-15

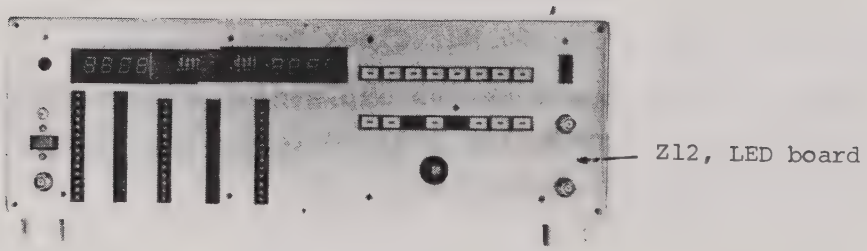


Fig. 4-16

SECTION 5

TROUBLESHOOTING AND REPAIR

5.1 Introduction

This section describes how to locate a main cause of trouble. And for actual troubleshooting, it also describes the waveform figures of the TP points and detailed circuit descriptions on Z5 I/O board II, Z6 analog board I, Z7 analog board II and Z8 50 MHz clock board which are required for troubleshooting.

5.2 Location Procedures

- o No power

  (1) Check the fuse at the rear panel.

AC Voltage	Current	Q'ty
100 to 127 V	3.15 A	2
200 to 254 V	2 A	2

  (2) Check the Z9 power board.

- o Power is ON, but the front panel indications are abnormal.

  (1) Check whether the ROMs (Q31, 32, 41, 42, 51 and 52) and CPU (Q11) on the Z3 control board I are inserted correctly.

- o When a signal is input, the input alarm goes ON and measurements cannot be made.

  (1) Do the input signal and the set waveform match?

  (2) Does the signal have vertical synchronization?

(3) Is the input level within the 0.5 Vp-p to 2 Vp-p range?

(4) Is the ITS/FF set correctly?

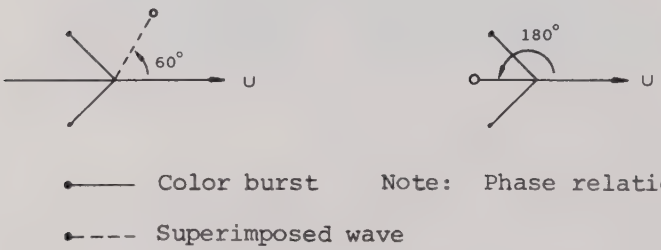
(5) If the input alarm is still ON after checking the above four points, check the Z6 analog board I.

o A bit error (spike noise) exists in the waveform in WAVE mode.

(1) Adjust C33 on the Z8 50 MHz clock PC board.

o The differential phase cannot be measured.

(1) Confirm whether the phase relation of the color burst and the superimposed wave is the same for NTSC. Also check whether the superimposed wave phase is 60° (can be set to 180° by switching pins in the Z7 analog board II) from the U axis for PAL.



(2) Check the Z7 analog board II

o Limit data is not displayed and the measured items are skipped.

(1) Check the Z11 limit PC board. If the limit data is all OFF, there will be no display and no performance for threshold level measurement. If the performance bit is turned OFF, the measured items are skipped.

o Printer does not operate in talk only mode.

(1) Is the printer in listen only mode?

(2) Is the interface cable connected properly?

(3) Check the Z2 control board II and the Z13 connector board.

o The GP-IB or RS-232C control does not operate.

(1) Is the MS349D/E talk only mode released? Is the device address set correctly?

(2) Check the Z2 control board II and the Z3 connector board.

5.3 Setup

Set to fill field mode as described in Section 3.2.

5.4 Z5 I/O Board II (Schematic No. 7 and 8)

(1) Place the board in the position shown in Fig. 4-11 in Section 4.5.

(2) Externally synchronize the oscilloscope with the TP2 on the Z6. (Unless specified, use TP2 Z6 for synchronization for the following section.)

(3) Input the composite repeat signals (1.01.1), and press the [RUN] key in WAVE mode.

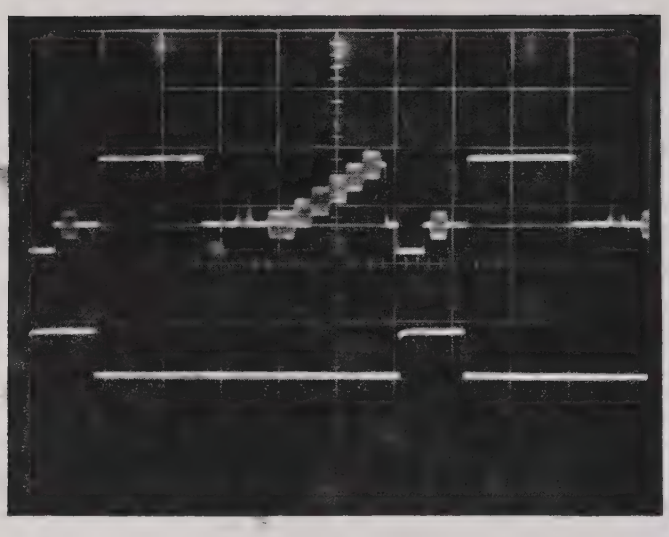


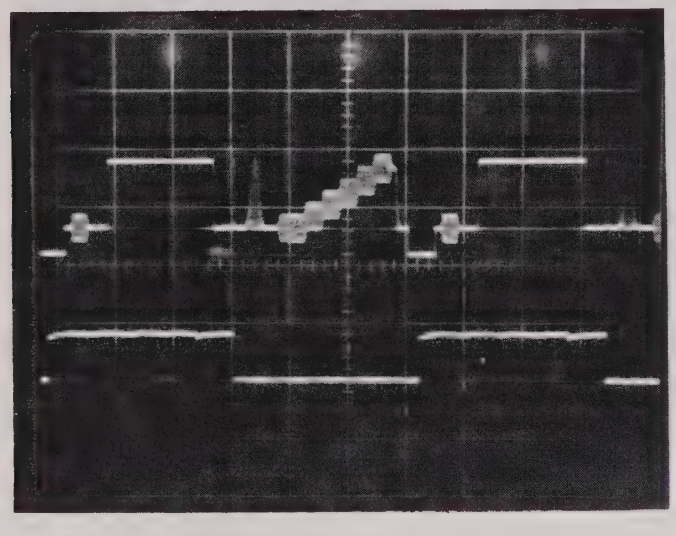
Fig. 5-1

(The TP12 waveform for PAL differs from this figure, but the timing relation is the same as TP1.)

(4) TP2

DC level for AGC	Composite:	about 1.2 V
	5(10) step:	about 1.5 V
	Sawtooth:	about 1.8 V

(5) Put it in RUN state and in WAVE mode



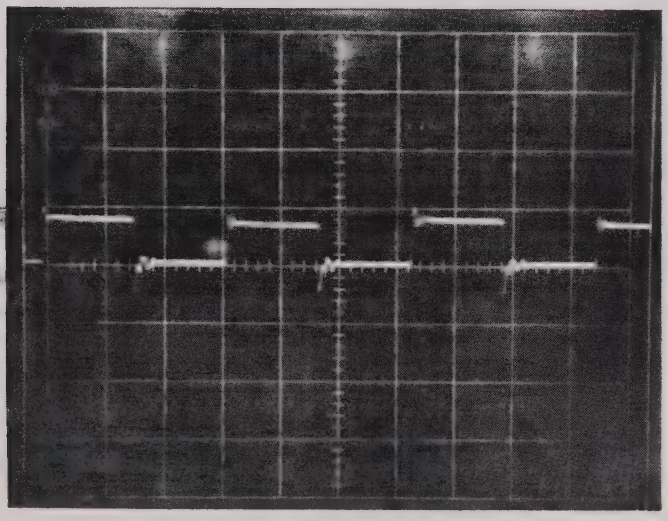
(Z7, TP12)

TP4 5 V/div

10 µS/div

Fig. 5-2

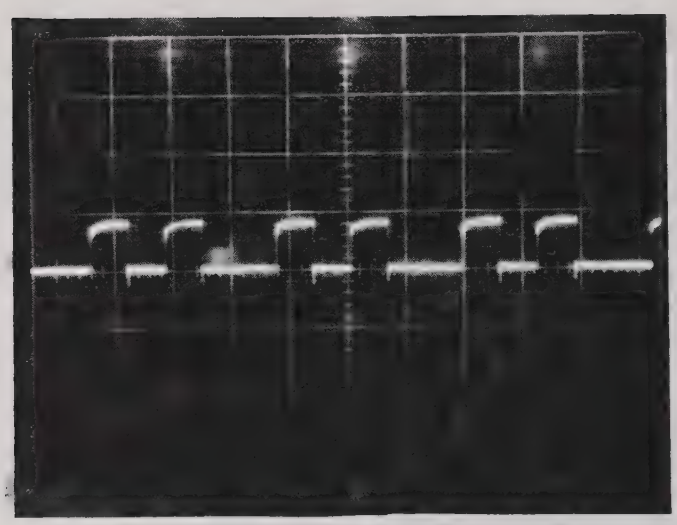
(The TP12 waveform for PAL differs from this figure, but the timing relationship with TP4 is the same.)



TP5 5 V/div

0.2 µS/div

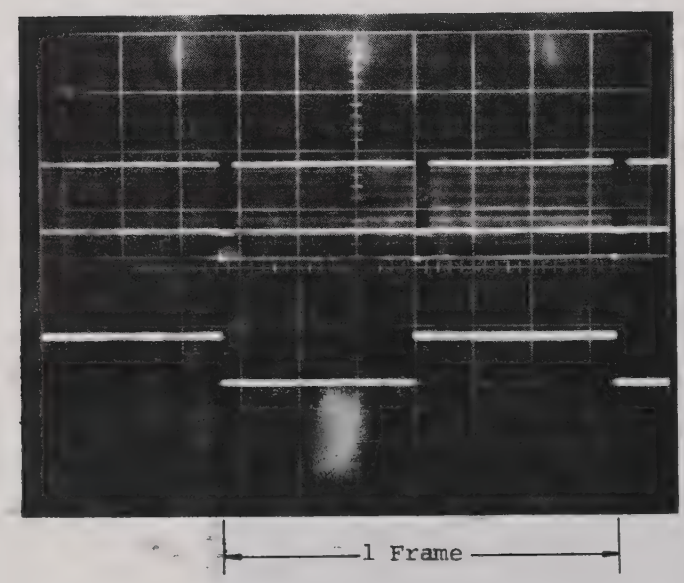
Fig. 5-3



TP6 5 V/div

2 µS/div

Fig. 5-4



(Z7, TP12)

TP7 5 V/div

5 nS/div

Fig. 5-5

(Synchronize the oscilloscope with the TP7 waveform.)

(6) Input the composite repeat signal (1.01.1), and measure the LOW FREQ ERR.

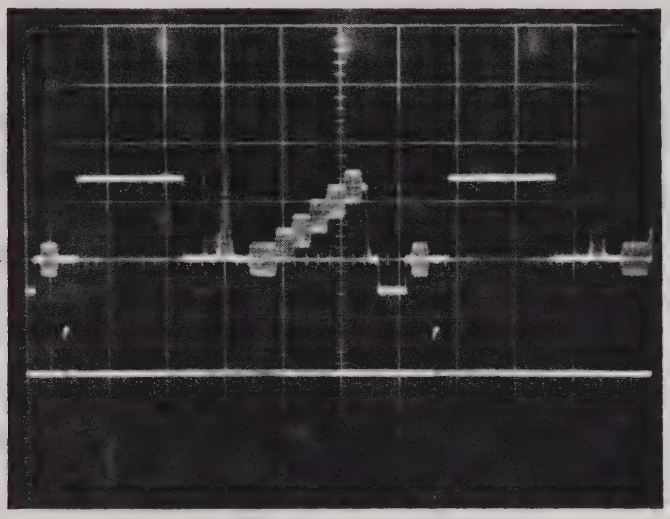


Fig. 5-6

(The TP1 waveform for PAL differs from this figure, but the timing relationship is the same.)

(7) Input the multiburst repeat signal, and measure the MULTIBURST.

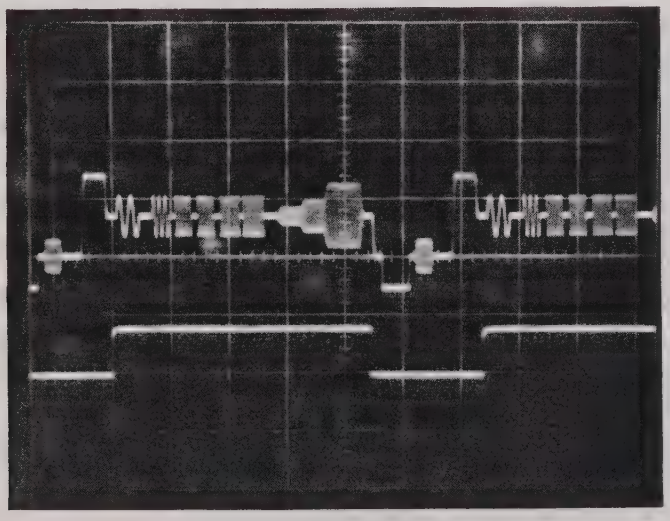
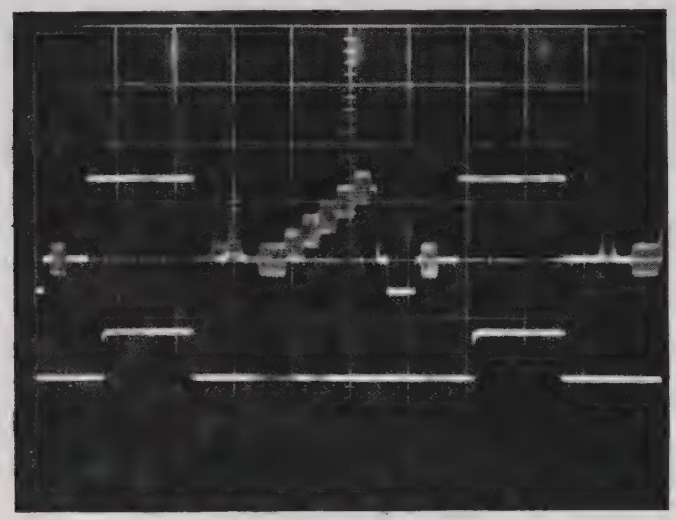


Fig. 5-7

(The TP7 waveform for PAL differs from this figure, but the timing relationship is the same.)

(8) Input the composite repeat signals (1.01.1), and measure the S/C PERIODIC NOISE.



(Z6, TP1)

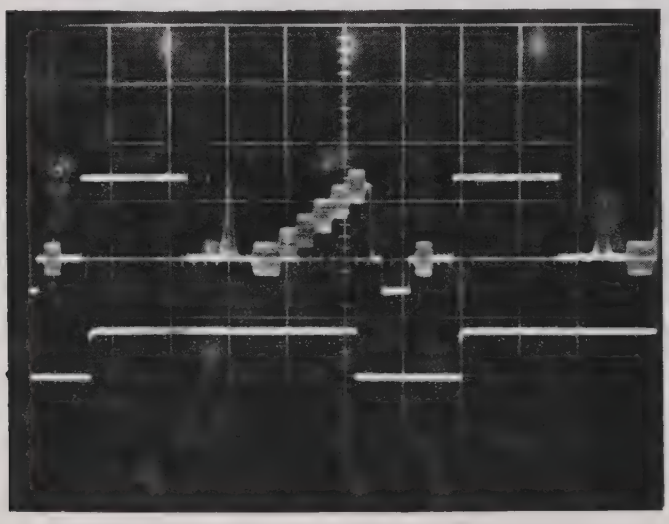
Q45, No. 8 pin
5 V/div

10 µS/div

Fig. 5-8

(The TP1 waveform for PAL differs from this figure, but the timing relationship is the same.)

(9) Input the composite repeat signals (1.01.1), and measure the S/N UNWEIGHT and WEIGHT.



(Z6, TP1)

Q45, No. 11 pin
5 V/div

10 µS/div

Fig. 5-9

(The TP1 waveform for PAL differs from this figure, but the timing relationship is the same.)

5.5 Z6 Analog Board I (Schematic No. 9)

5.5.1 Detailed description of the circuit

- See the circuit diagram and the MS349D/E SCHEMATIC DIAGRAM in Fig. 2-1.
- SYNC DETECT circuit ..... Q106 to Q114
- f_{sc} Band Pass Filter ..... LC filters in R68 to R70
- 2 kHz Low Pass Filter ..... Active filter in Q51 (1/2) to (2/2)
- 10 Hz High Pass Filter .... Active filter in Q52 (1/2) to (2/2)
- 3.3 MHz Low Pass Filter ... Active filter in R47 to R48
- d/dt circuit ..... LC filter in R292 to R298
- 23 dB Amplifier Q61
- 5 MHz Low Pass Filter ..... LC filter in R89 to L14
- 10 kHz High Pass Filter ... LC filter after C46 to R91
- f_{sc} Trap filter ..... R351 to R352
- Weighing network ..... LCR filter in R104 to R110
- f_{sc} Band Pass Filter ..... LC filter in R186 to R187
- ⎍ Clip network ..... Q75 to Q76
- f_{sc} Low Pass Filter ..... LC filter in R213 to R214
- ⎍ Clip network ..... Q96 to Q97
- ⎎ Clip network ..... Q98 to Q99
- 700 kHz Low Pass Filter ... LC filter in R255 to R256

5.5.2 Waveform at each TP point

(1) Input composite repeat signals (1.01.1), and press the [RUN] key in wave mode.

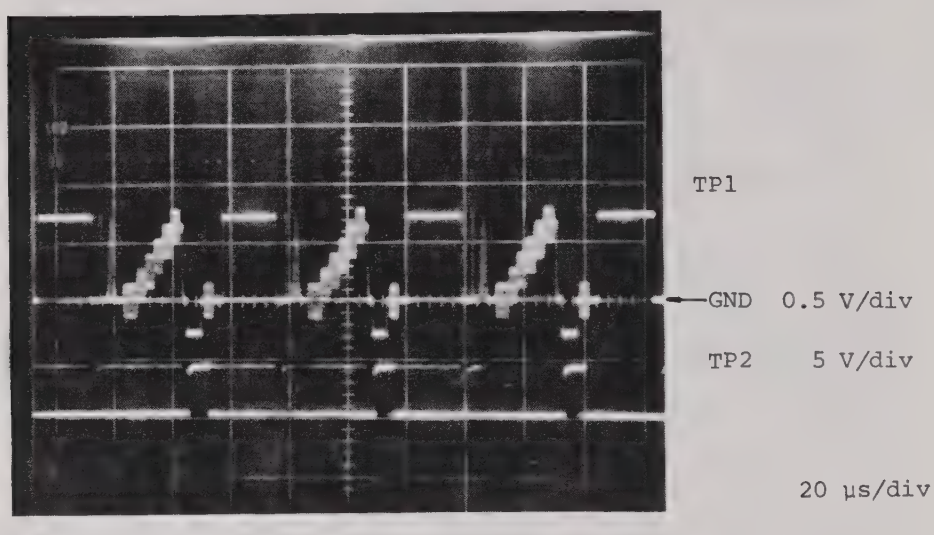


Fig. 5-10

(The TP1 waveform for PAL differs from this figure, but the timing relationship with TP2 is the same.)

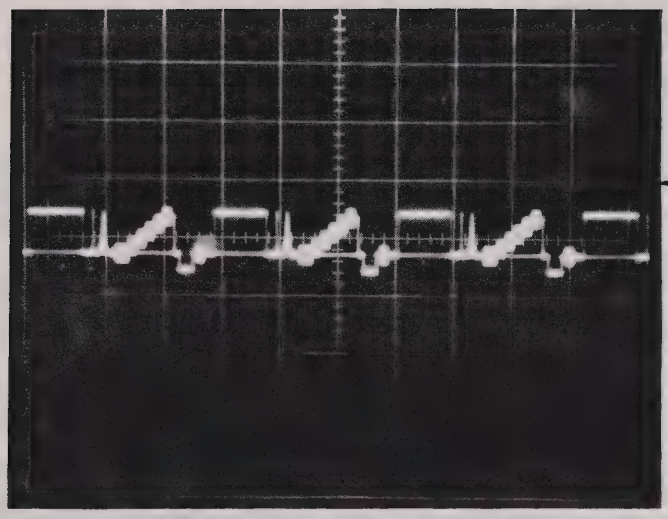


Fig. 5-11

(The TP3 waveform for PAL differs from this figure, but the level relationship is the same.)

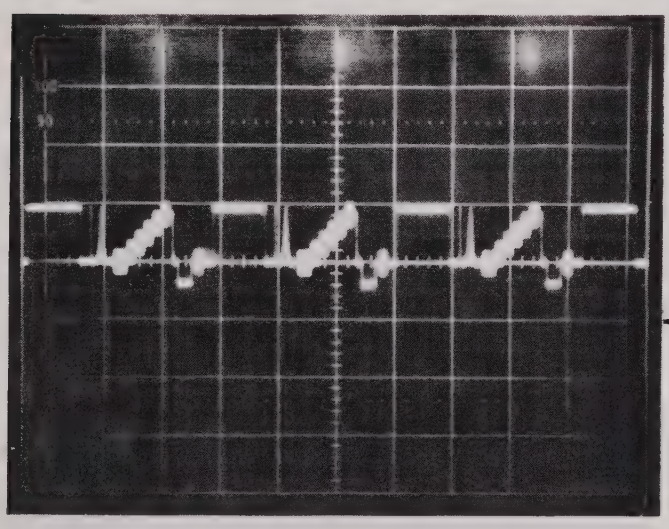


Fig. 5-12

(The TP4 waveform for PAL differs from this figure, but the level relationship is the same.)

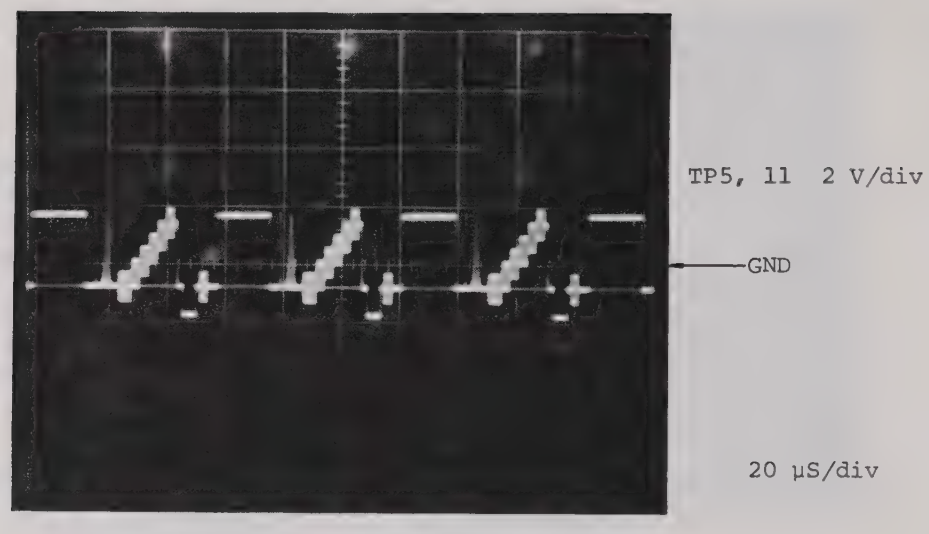


Fig. 5-13

(The TP5 and TP11 waveforms for PAL differ from this figure, but the level relationship is the same.)

Note: When the offset is out of alignment, adjust R337.

(2) Input composite repeat signals (1.01.1), and measure C/L GAIN and DELAY.

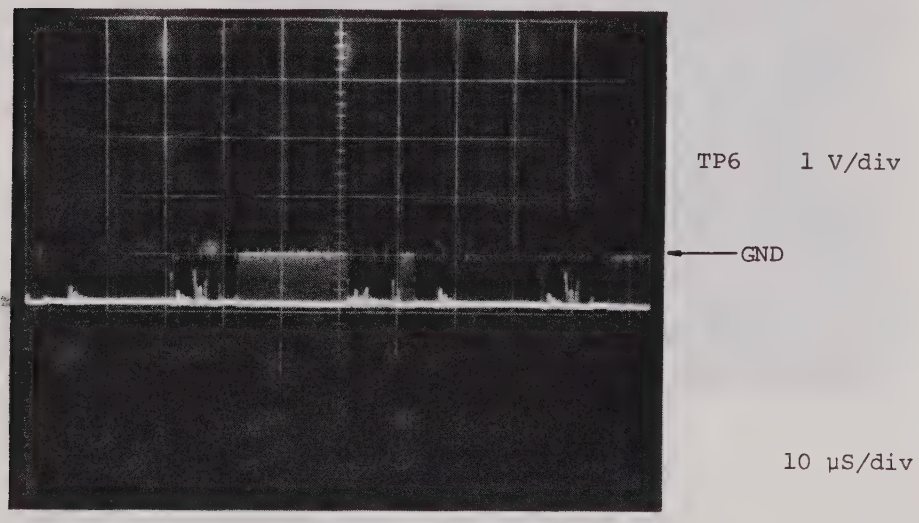


Fig. 5-14 (For NTSC)

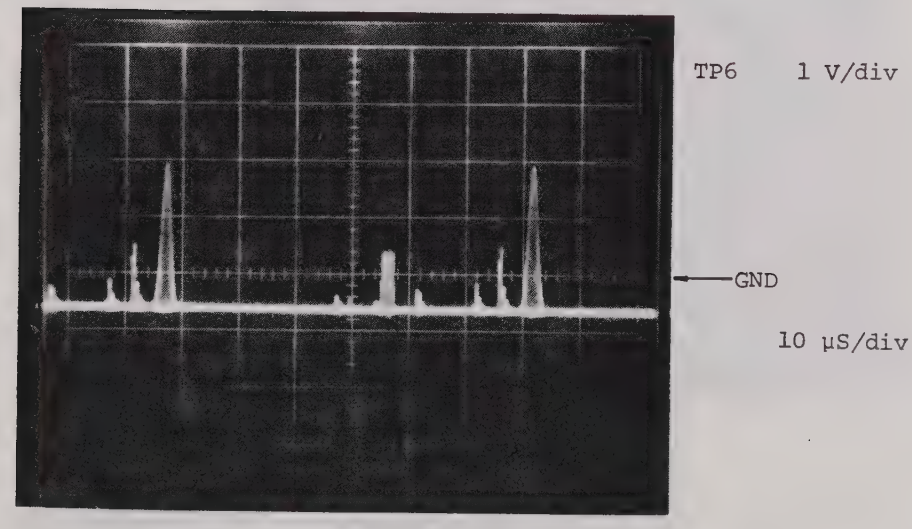


Fig. 5-15 (For PAL)

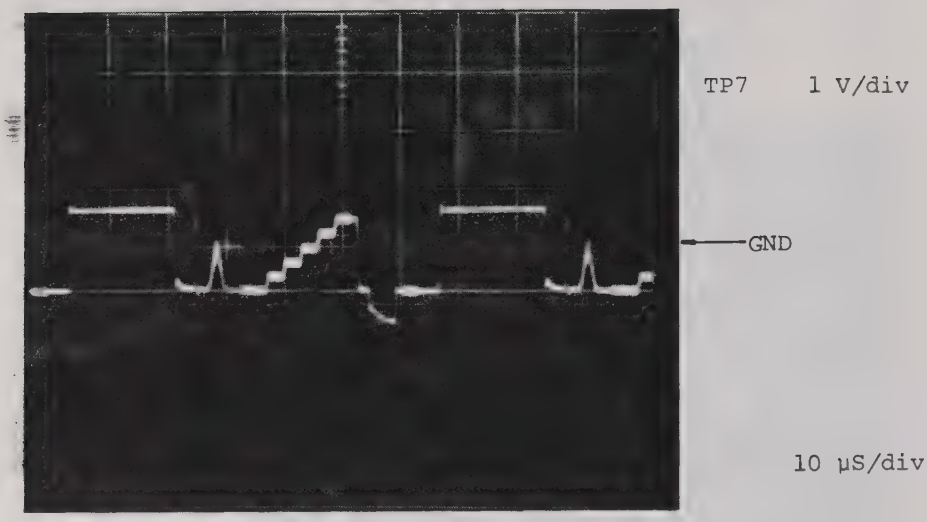


Fig. 5-16 (For NTSC)

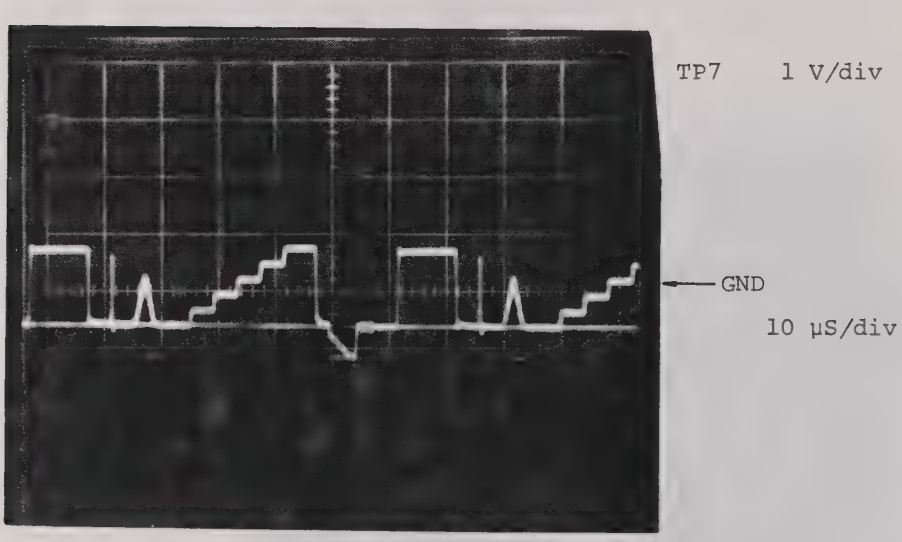


Fig. 5-17 (For PAL)

(3) While measuring C/L GAIN and DELAY, the waveforms shown in Fig. 5-18 and 5-19 (Fig. 5-20 and 5-21 for PAL) are seen alternately at TP8.

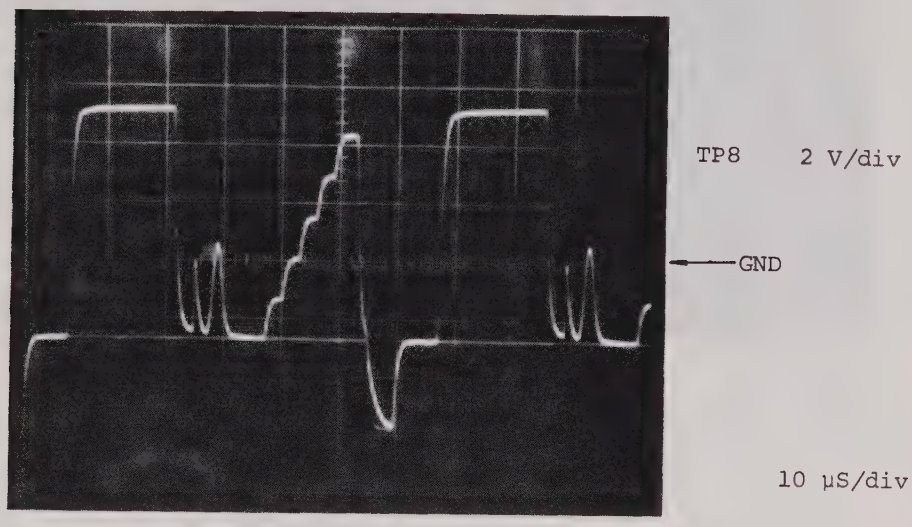


Fig. 5-18

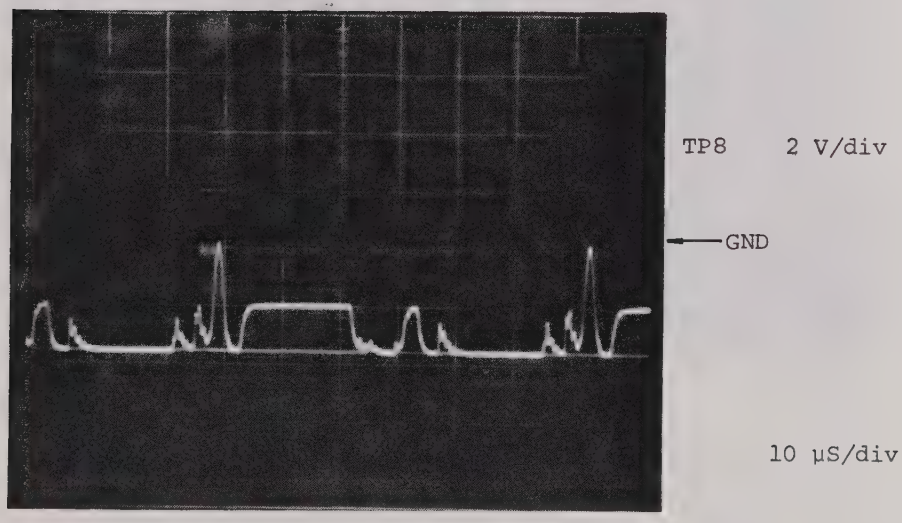


Fig. 5-19

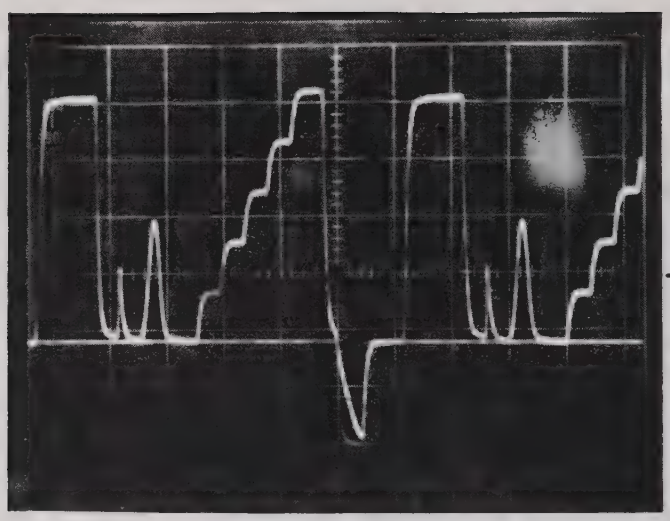


Fig. 5-20 (For PAL)

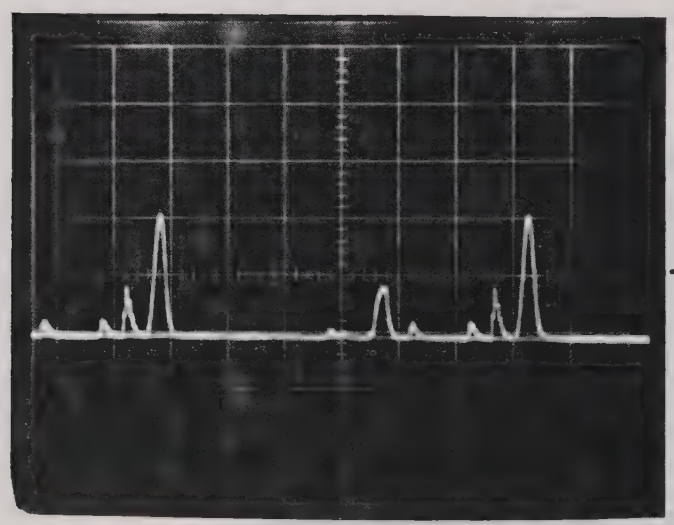


Fig. 5-21 (For PAL)

(4) Input multiburst repeat signals and measure MULTIBURST.

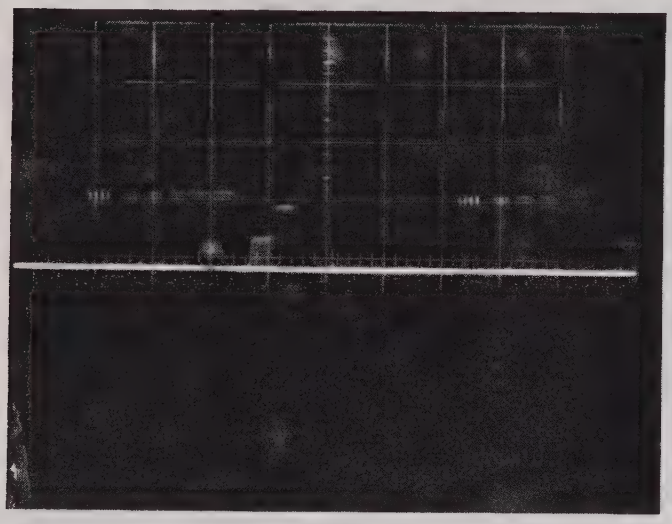


Fig. 5-22

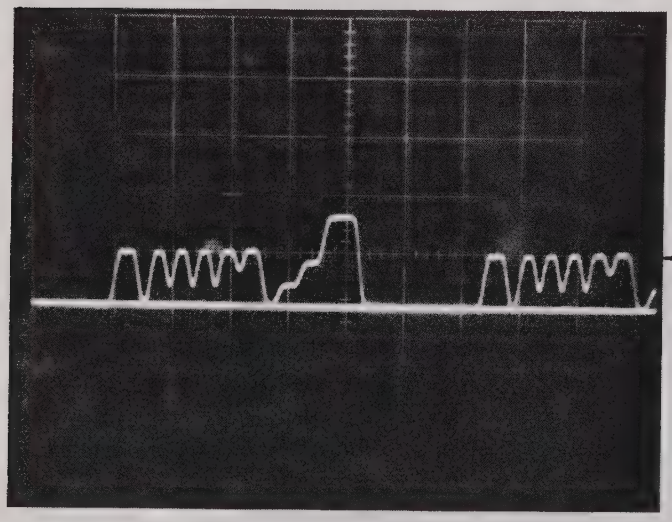


Fig. 5-23

(5) Input composite repeat signals, and measure SYNC AMPL ERR.

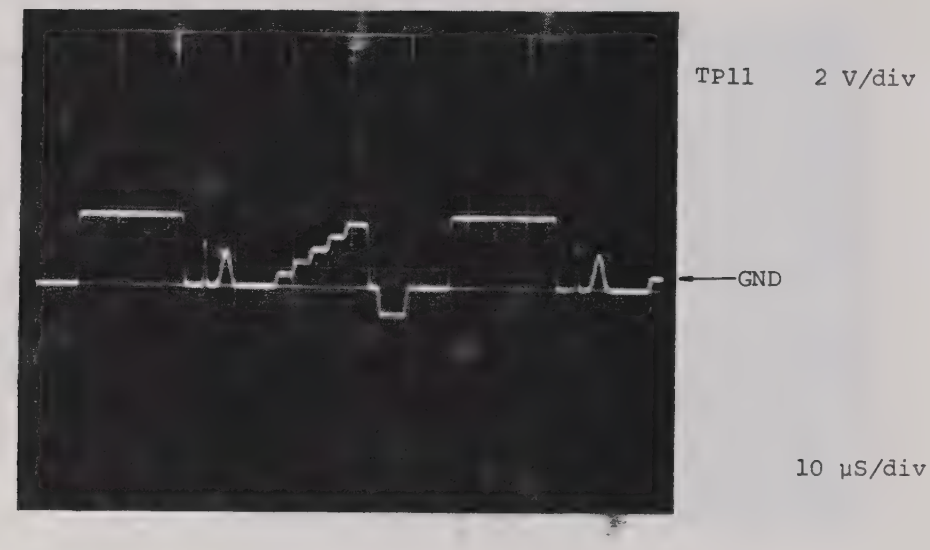


Fig. 5-24

(6) Input composite repeat subcarrier OFF signals (composite repeat 1.01.1 for PAL), and measure L NON-LINEAR.

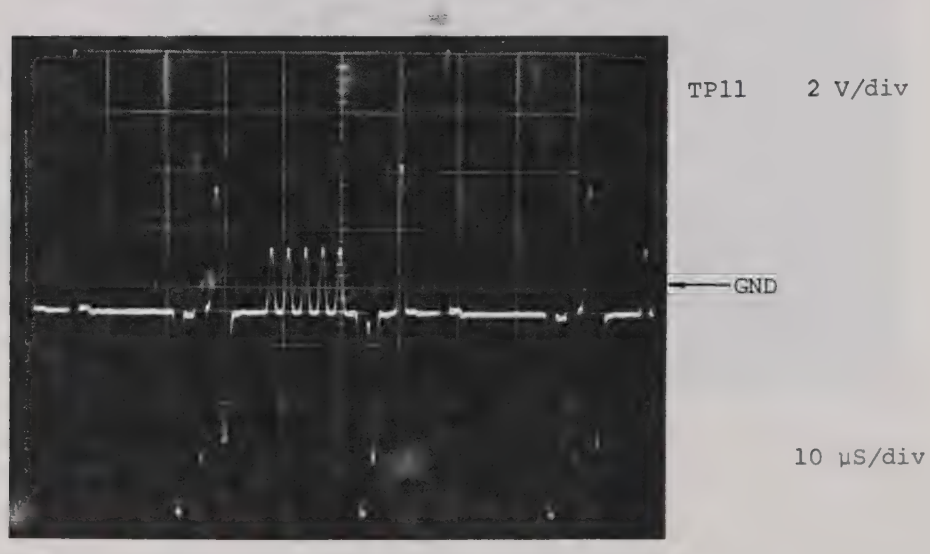


Fig. 5-25

(7) As shown No. 3-10 in Table 3-2, add a sine wave noise to composite repeat signals, and measure the LOW FREQ ERR.

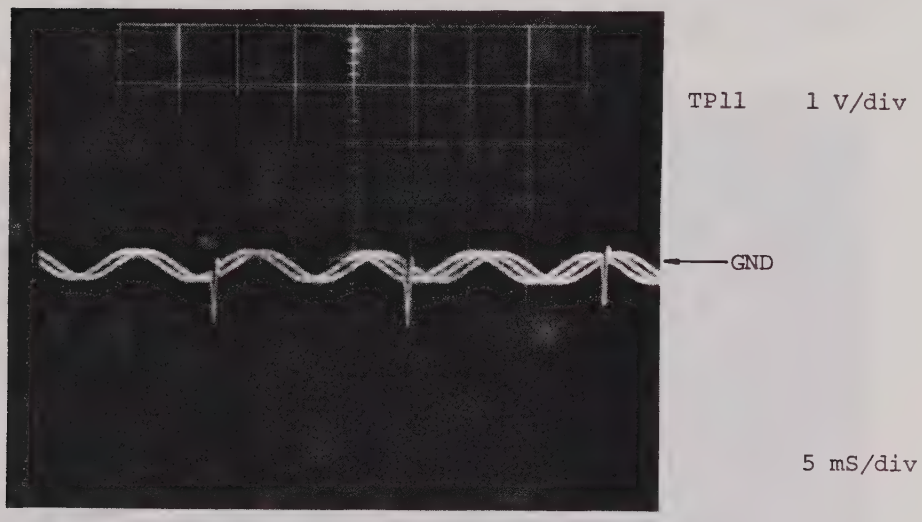


Fig. 5-26

(8) As shown No. 3-10 in Table 3-2, add a sine wave noise to the composite repeat signals, and measure the S/C PERIODIC NOISE.

(Externally synchronize the oscilloscope with TP7 on the Z5. The detection waveform will appear on the 10th line field 1 and 2.)

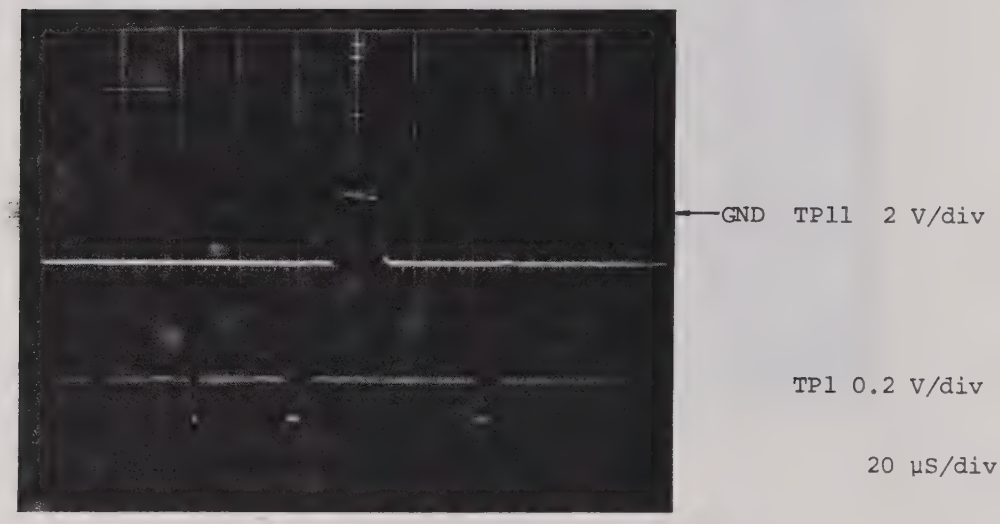


Fig. 5-27

(9) As shown No. 3-9 in Table 3-2, add noise to the composite repeat signals, and measure the S/N UNWEIGHT and WEIGHT. (In Fig. 5-28, a 500 kHz sine wave has been added as noise. Externally synchronize the oscilloscope with TP7 on Z5, and the detection waveform will appear on the 10th line in fields 1 and 2.)

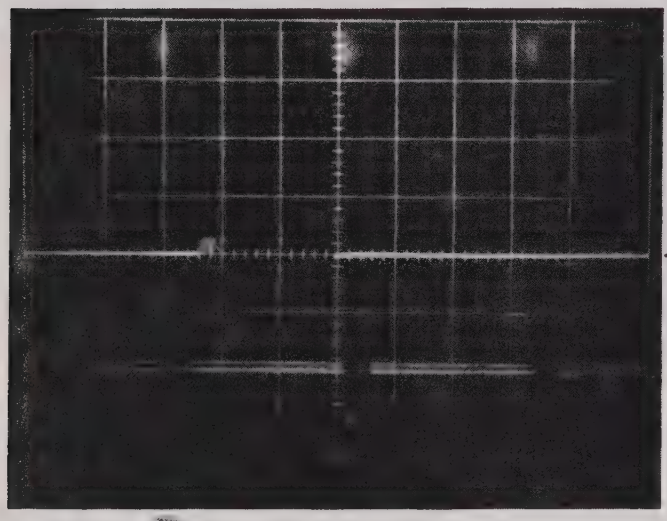


Fig. 5-28

5.5.3 Check items and Remarks

(1) Except for DG, DP, C NON-LINEAR (phase) and color bar (phase), all analog processing end in the Z6 Analog board I.

(2) Since the input level of the A/D converter is ±2.5 V, the sampling point should be set so it does not go over this level.

(3) The clamp is turned OFF for the LOW FREQ ERR and LONG TIME items. In this case, the offset is set with R320.

(4) See SCHEMATIC DIAGRAM in Fig. 2-1 or Table 2-1 when setting the route for each item.

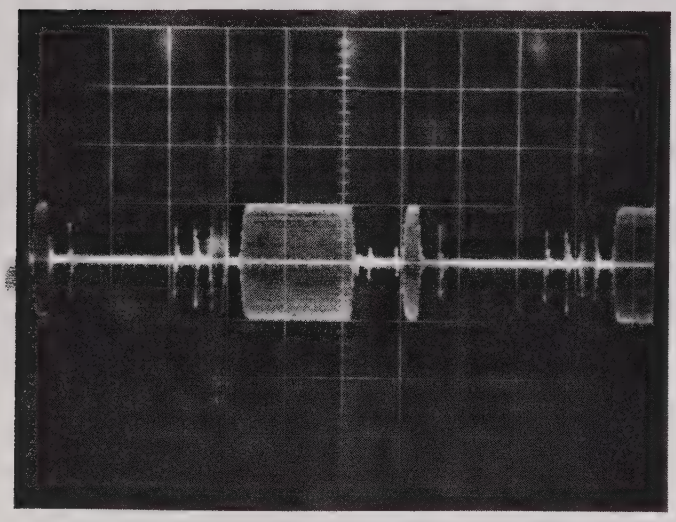
5.6 Z7 Analog Board II (Schematic No. 10)

5.6.1 Detailed description of the circuits

- See the circuit diagram and the MS349D/E SCHEMATIC DIAGRAM in Fig. 2-1.
- f_{sc} Band Pass Filter ..... LC filter in R1 to R23.
- Cal 10% ..... Make 10% Cal with R26 for R26 to Q20.
- ⌒ clip circuit ..... Composed of Q17 and Q18.
- f_{sc} Low Pass Filter ..... LC filter R212 to R213.
- f_{sc} regeneration circuit .... Composed of Q51 to Q56.
- Cal 10° ..... Make 10° Cal with L17 for Q68 to Q73.

5.6.2 Waveform at each TP point

(1) Input composite repeat signals (LINE 330 signals for PAL), and measure DG and DP.

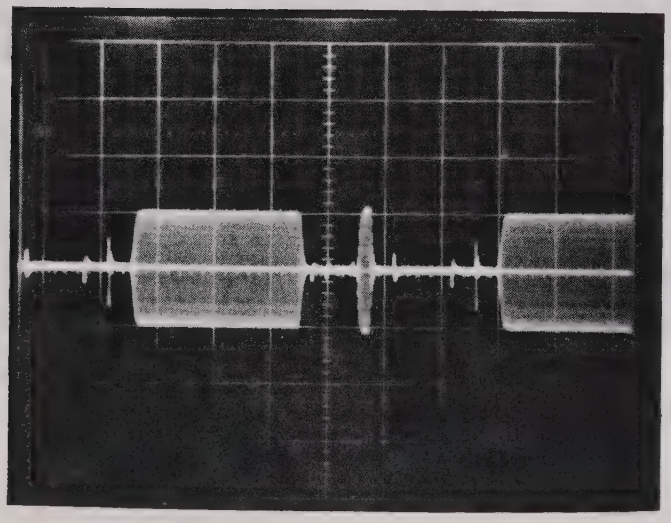


TP2 0.5 V/div

AC Couple

10 µS/div

Fig. 5-29

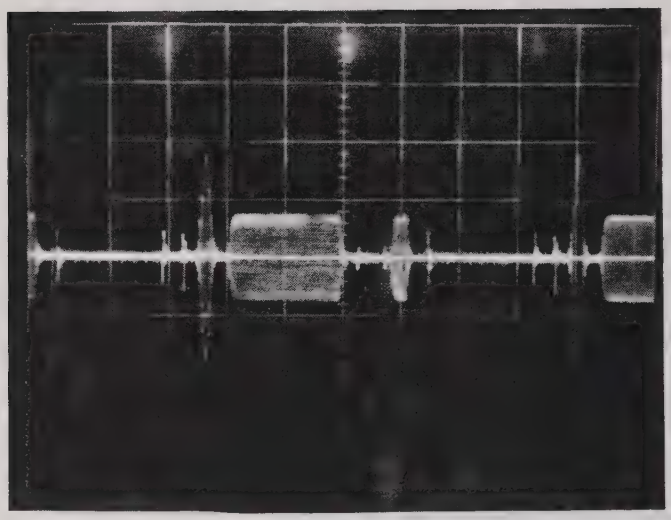


TP2 0.5 V/div

AC Couple

10 µS/div

Fig. 5-30 (For PAL)

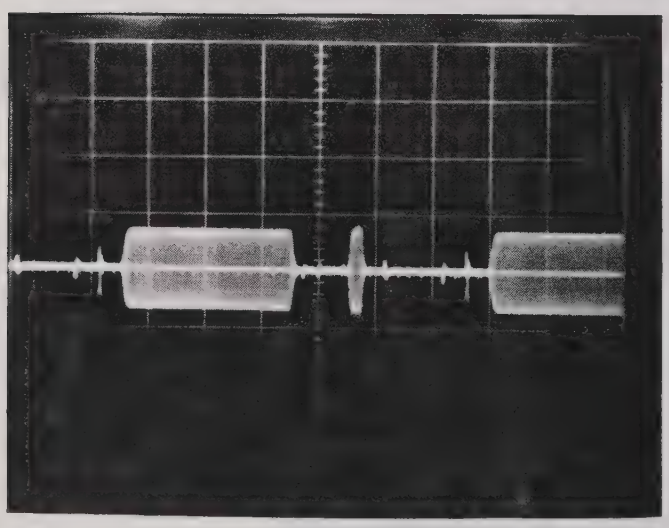


TP5 0.5 V/div

AC Couple

10 µS/div

Fig. 5-31



TP5 0.5 V/div

AC Couple

10 µS/div

Fig. 5-32 (For PAL)

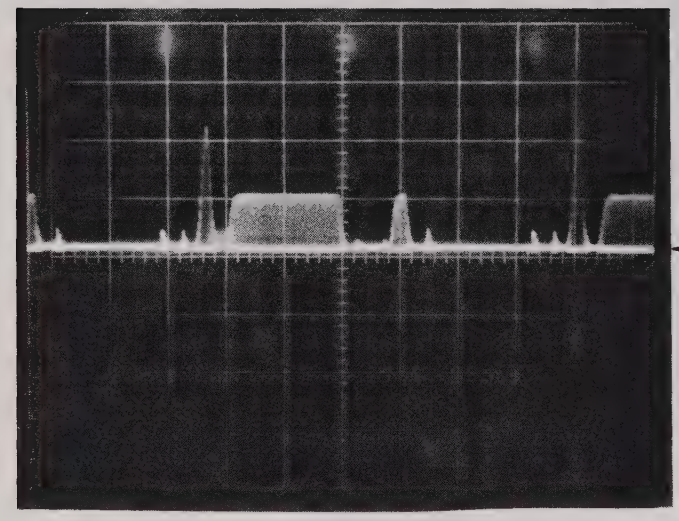


Fig. 5-33

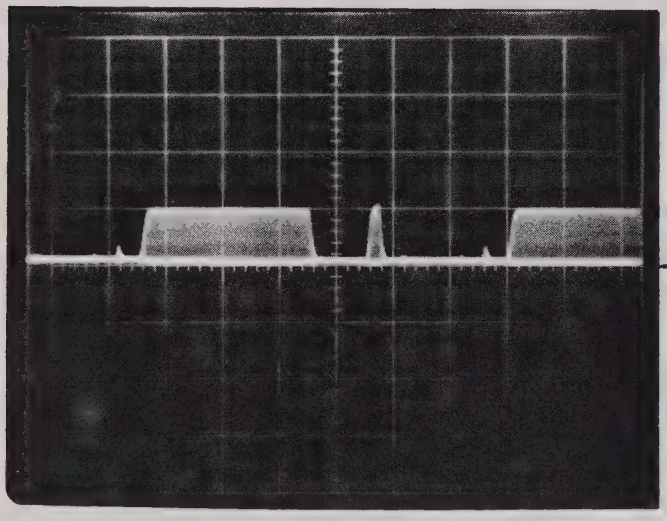


Fig. 5-34 (For PAL)

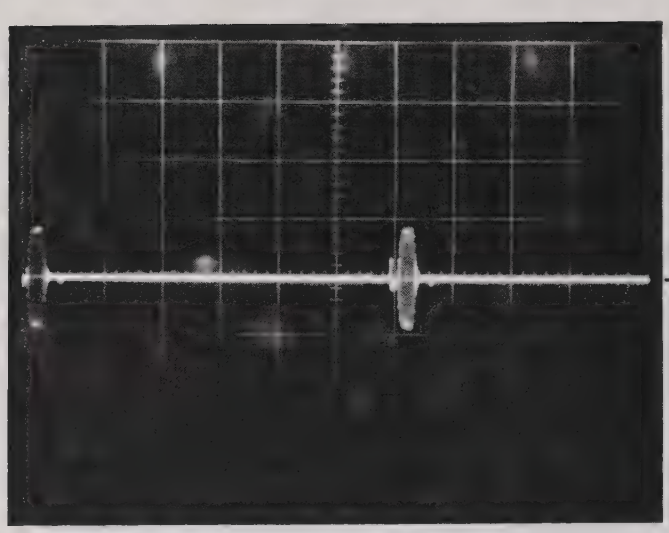


Fig. 5-35

(The subcarrier is output at each 1 line in PAL.)

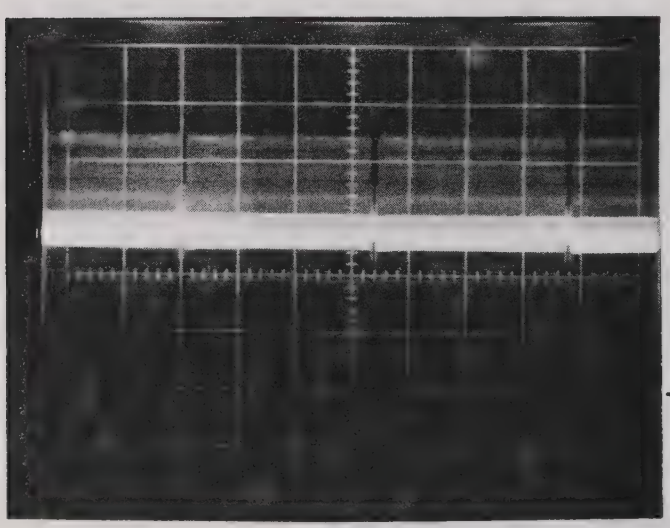
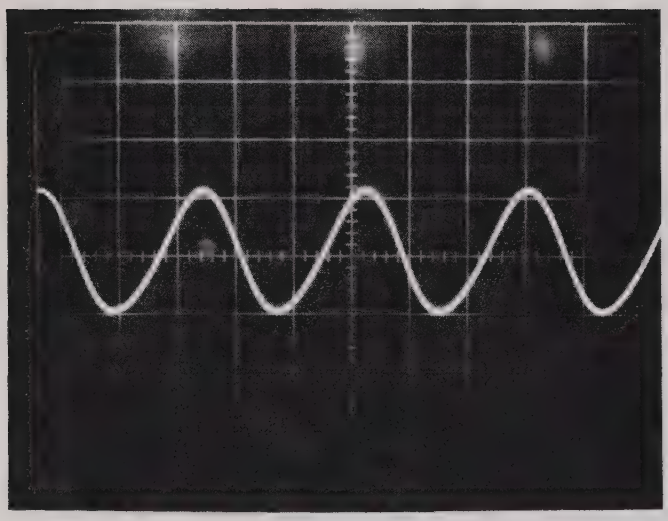


Fig. 5-36

(Timing for PAL differs from this figure, but the level relationship is the same.)



TP8 1 V/div

AC Couple

0.1 µS/div

Fig. 5-37 INT sync

(Timing for PAL differs from this figure, but the level relationship is the same.)

Freq. NTSC: 3.58 MHz
PAL: 4.43 MHz

(2) While measuring DG and DP, the detection waveforms in Fig. 5-38, 5-39, and 5-40 (in Figs. 5-41, 5-42 and 5-43 for PAL) can be observed in sequence.

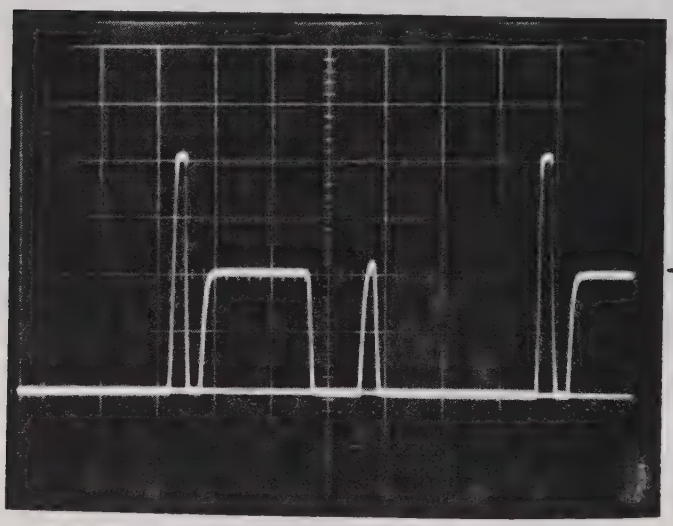


Fig. 5-38 DG Measure

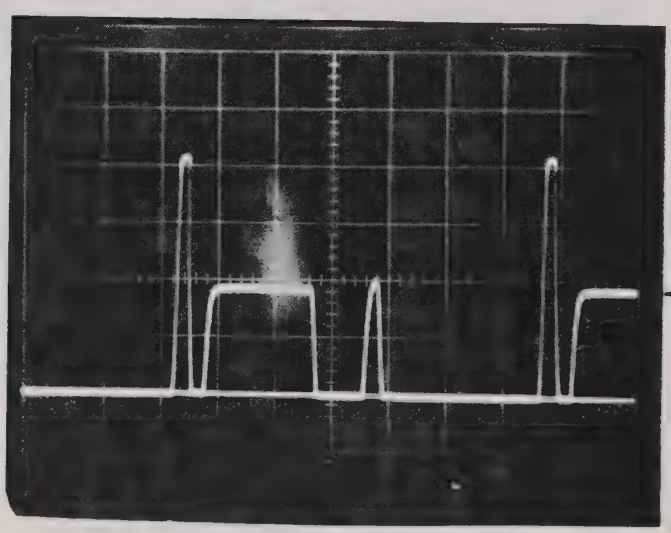


Fig. 5-39 DG Cal

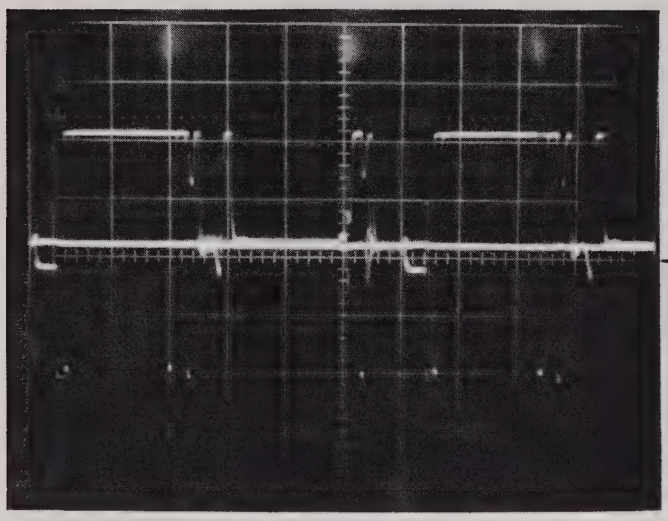


Fig. 5-40 DP detection waveform

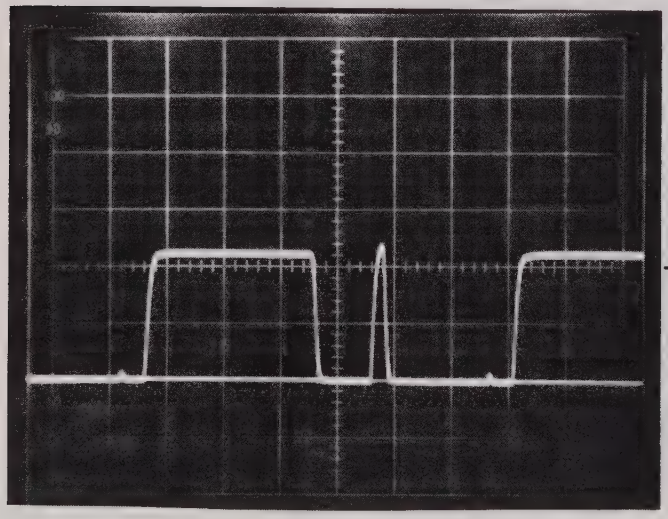


Fig. 5-41 DG Measure (For PAL)

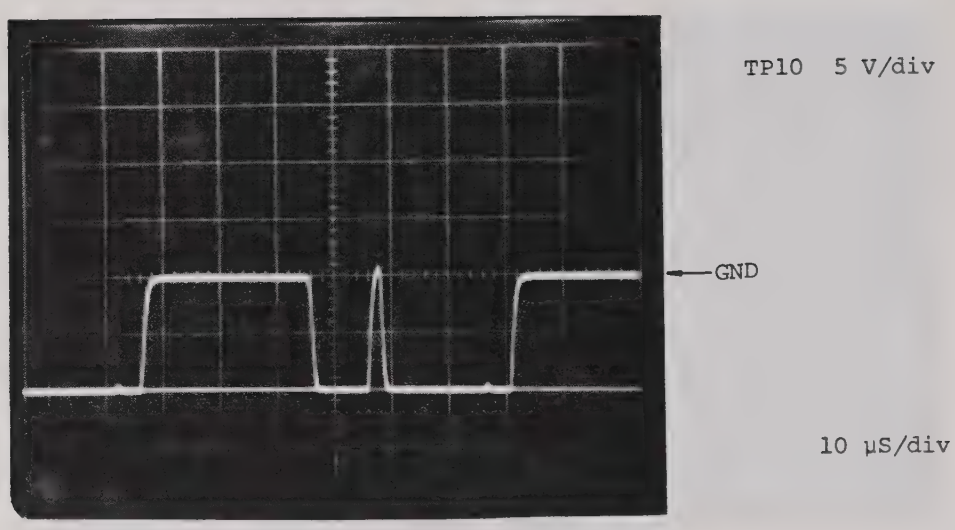


Fig. 5-42 DG Cal (For PAL)

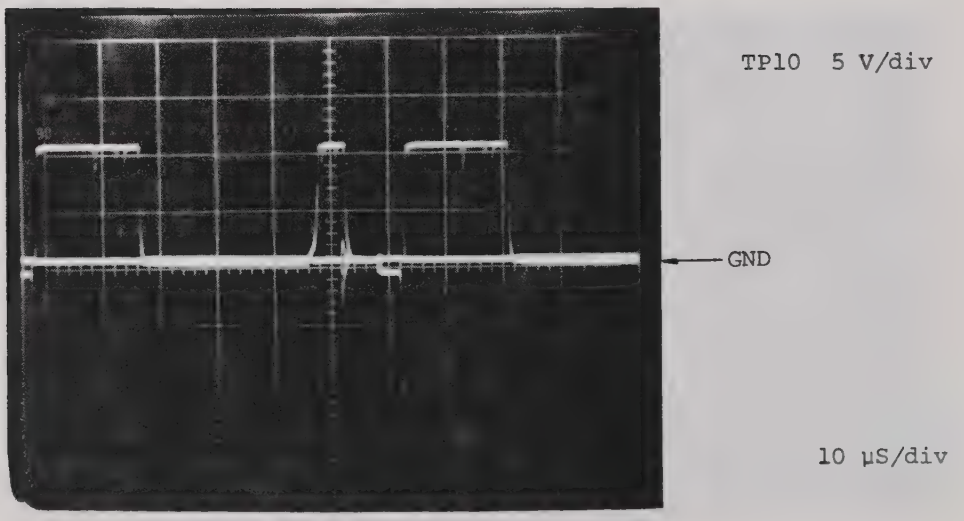


Fig. 5-43 DP detection waveform (For PAL)

5.7 Z8 50 MHz Clock Board (Schematic No. 11)

5.7.1 Detailed description of the circuits

- o See the circuit diagram and the MS349D/E SCHEMATIC DIAGRAM in Fig. 2-1.
- o 50 MHz clock oscillation circuit ... Composed of Q3 and Q4.
- o Frequency division circuit ..... Q17, 18, 12, 13 and 16 ICs.
- o Phase lock with H SYNC circuit ..... Q14 to Q16.

5.7.2 Waveforms at each TP point

(1) Input composite (1.01.1) from the transmission part.

(2) Press the [RUN] key in wave mode.

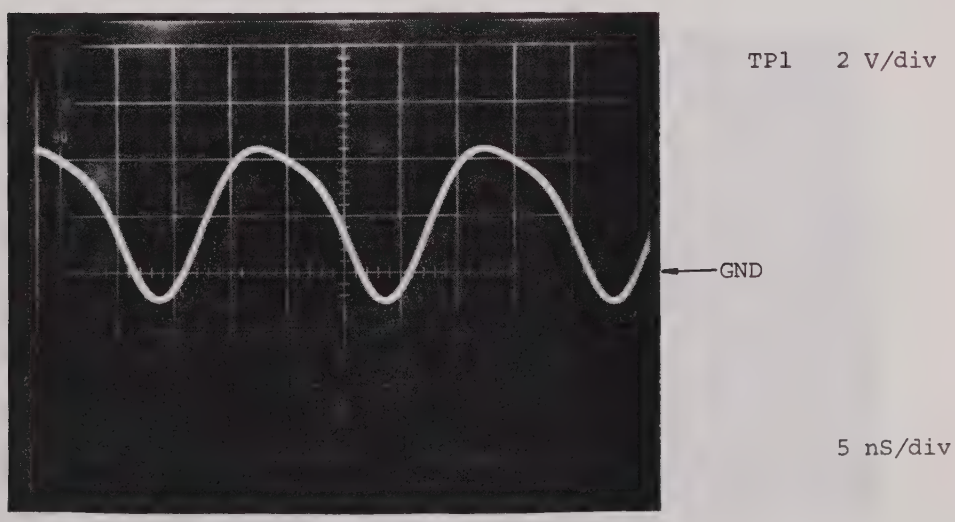


Fig. 5-44

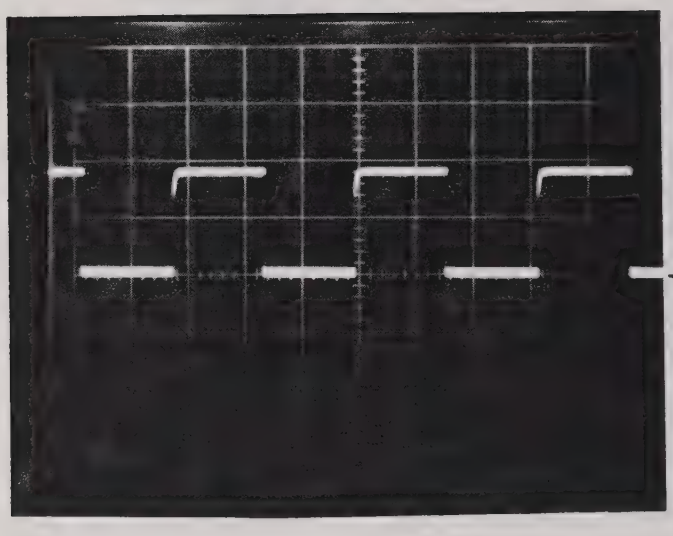


Fig. 5-45

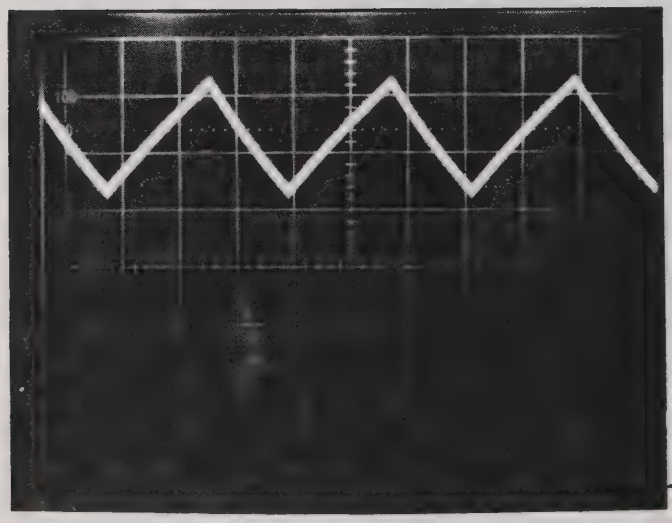


Fig. 5-46

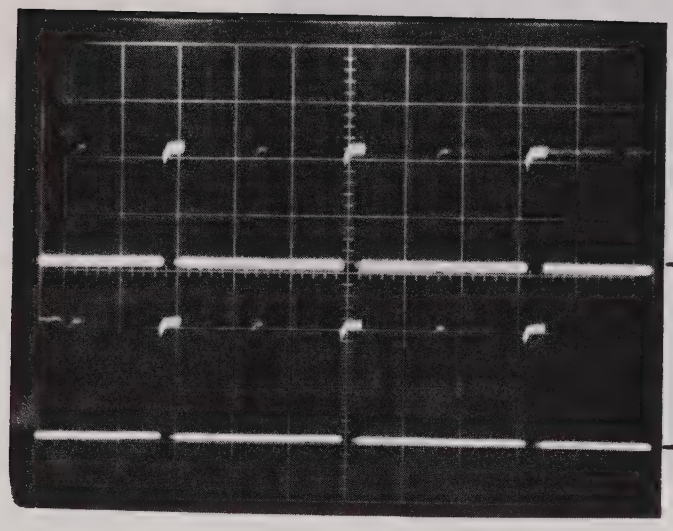


Fig. 5-47

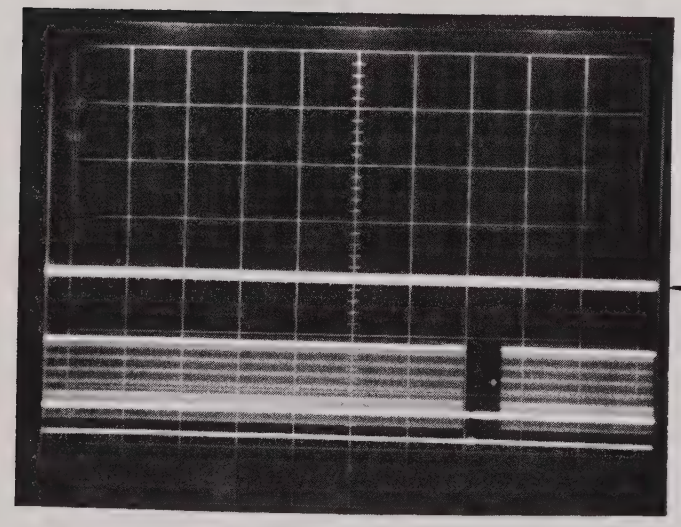


Fig. 5-48

(Frame synchronization at TP5 is a sampling pulse.)

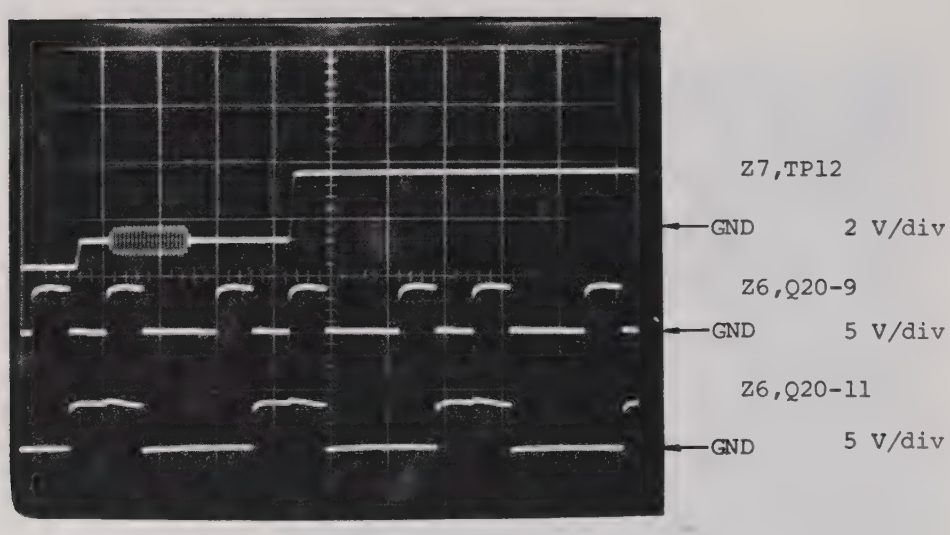


Fig. 5-49

o Adjust R26 so the Q20-9 rising matches that of the white.

SECTION 6

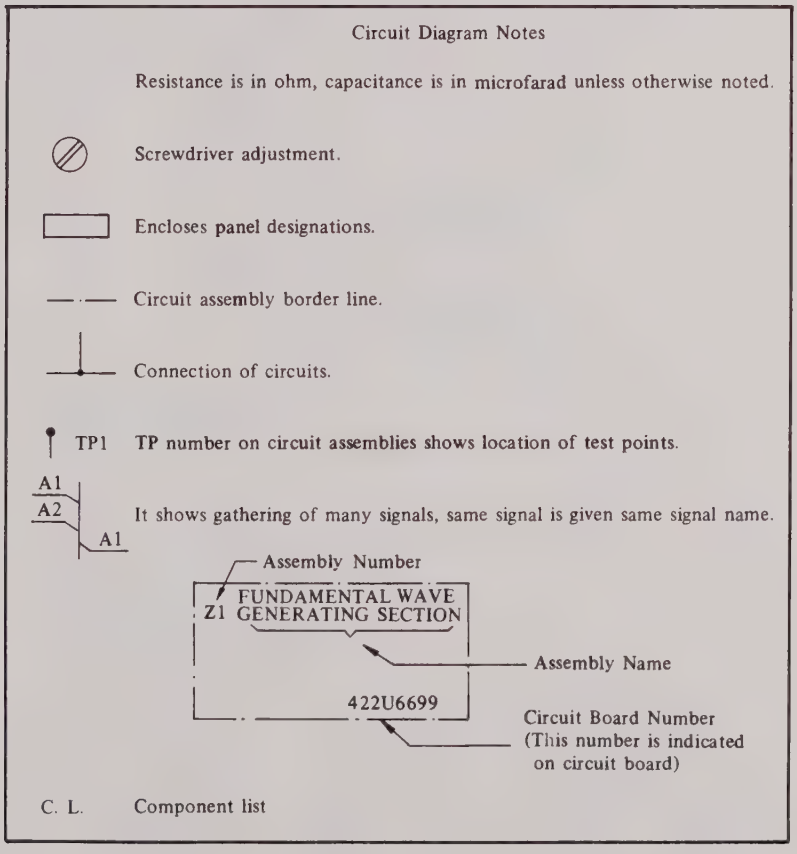
CIRCUIT DIAGRAM AND PC BOARD

6.1 Introduction

This section consists of circuit diagrams and PC board component locations.

6.2 Circuit Diagrams, Controls and Test points on PC Board

Table 6-1 Circuit Diagram Notes



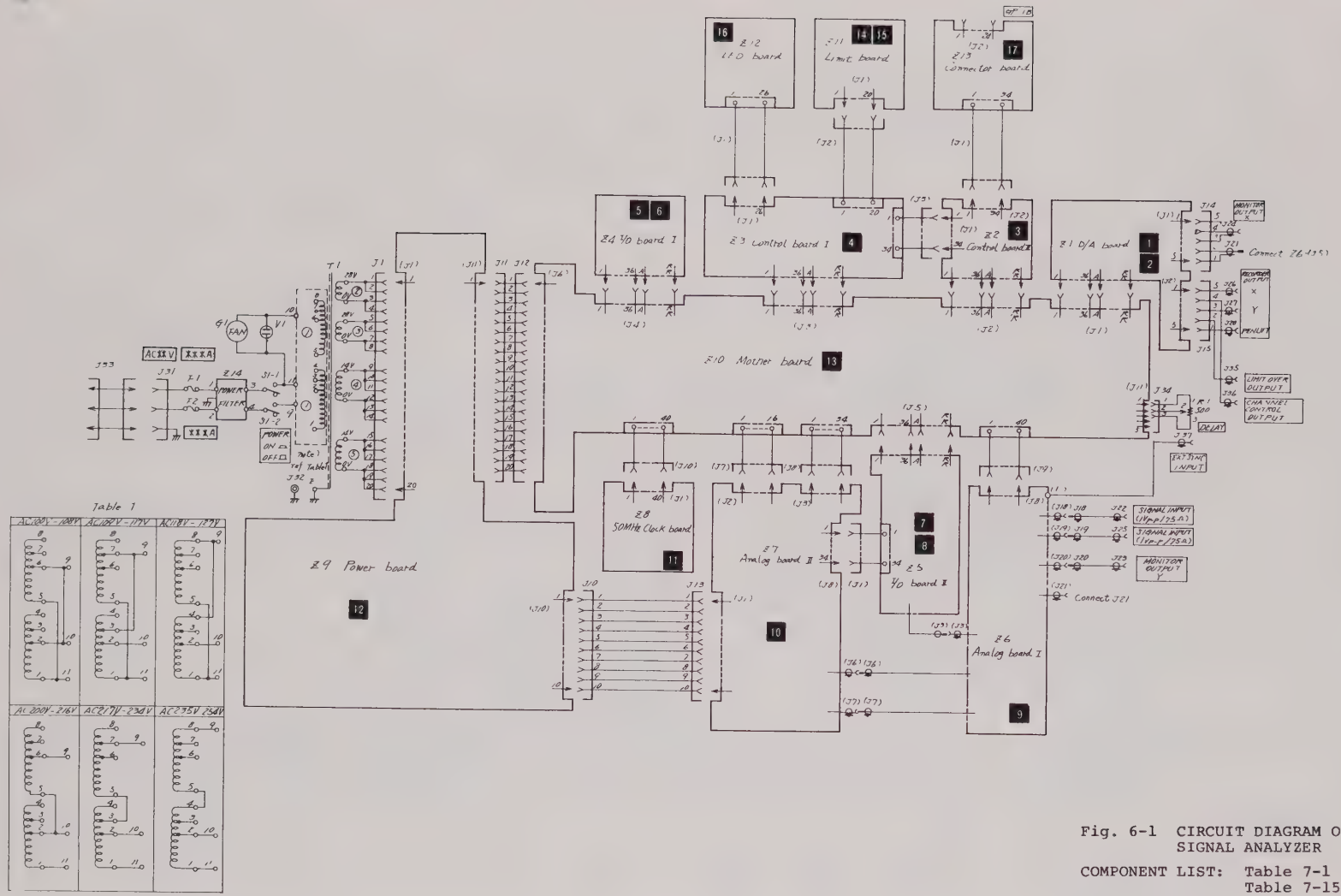


Fig. 6-1 CIRCUIT DIAGRAM OF VIDEO SIGNAL ANALYZER

COMPONENT LIST: Table 7-1 (NTSC)
Table 7-15 (PAL)

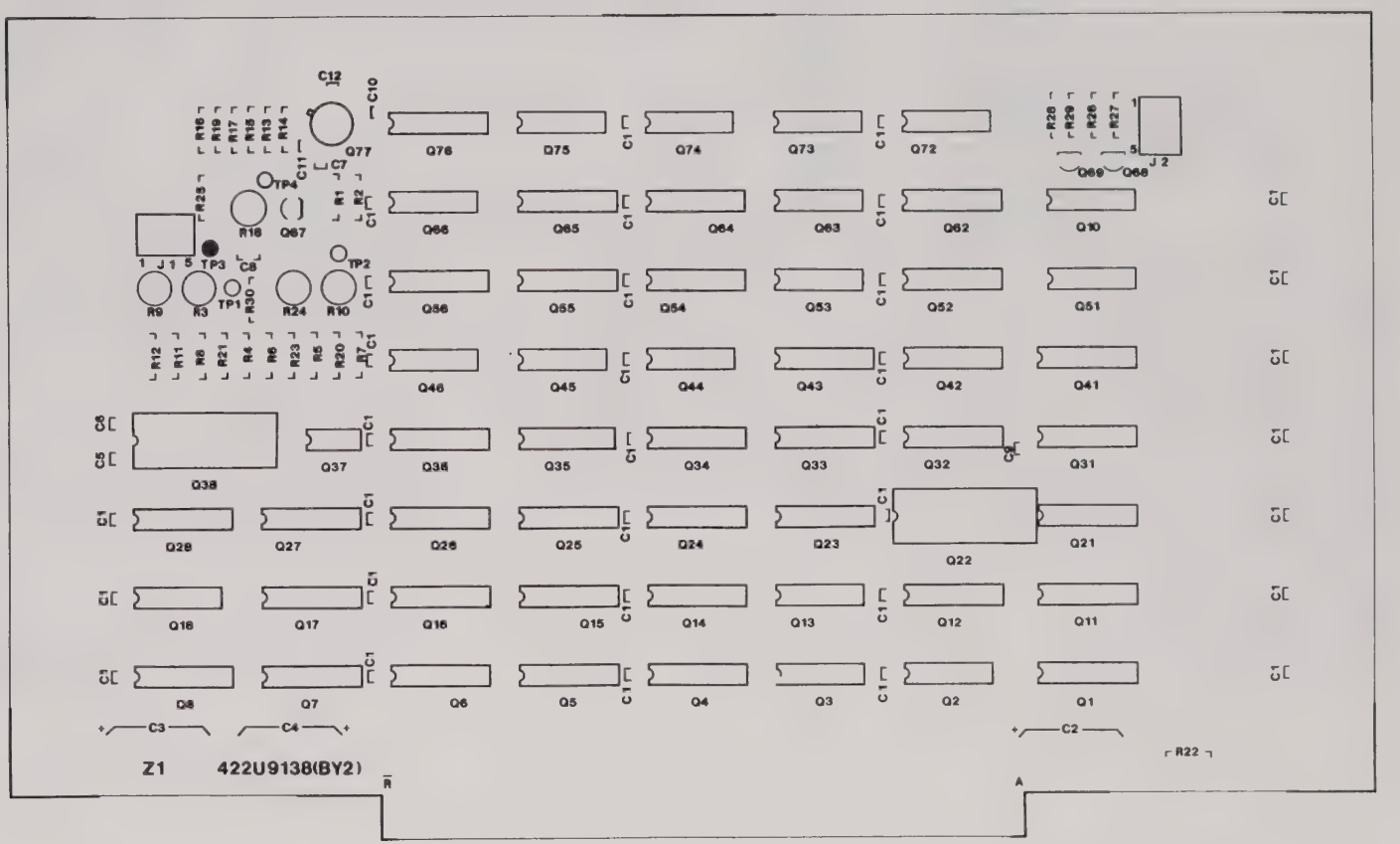
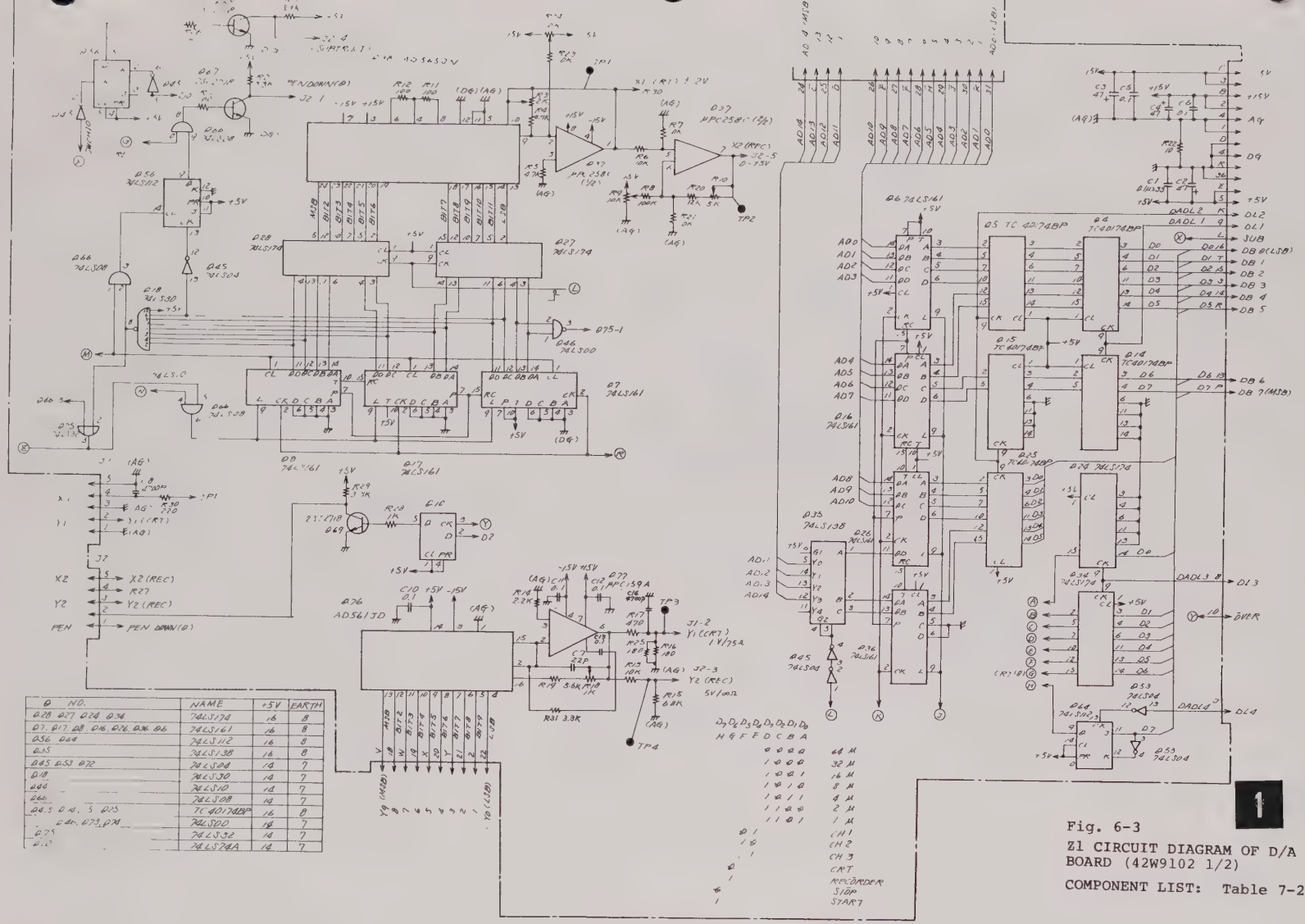


Fig. 6-2 Z1, D/A BOARD



Ø NO.	NAME	+5V	EARTH
Q28 Q27 Q24 Q34	74LS174	16	8
Q7. Q17 Q8 Q16 Q26 Q36 Q6	74LS161	16	8
Q56 Q66	74LS112	16	8
Q35	74LS138	16	8
Q45 Q53 Q72	74LS04	14	7
Q18	74LS30	14	7
Q46	74LS10	14	7
Q66	74LS08	14	7
Q4.5 Q14. 5 Q25	TC40174BP	16	8
Q44. Q73. Q74	74LS00	14	7
Q75	74LS32	14	7
Q.0	74LS74A	14	7

Fig. 6-3
Z1 CIRCUIT DIAGRAM OF D/A BOARD (42W9102 1/2)

COMPONENT LIST: Table 7-2

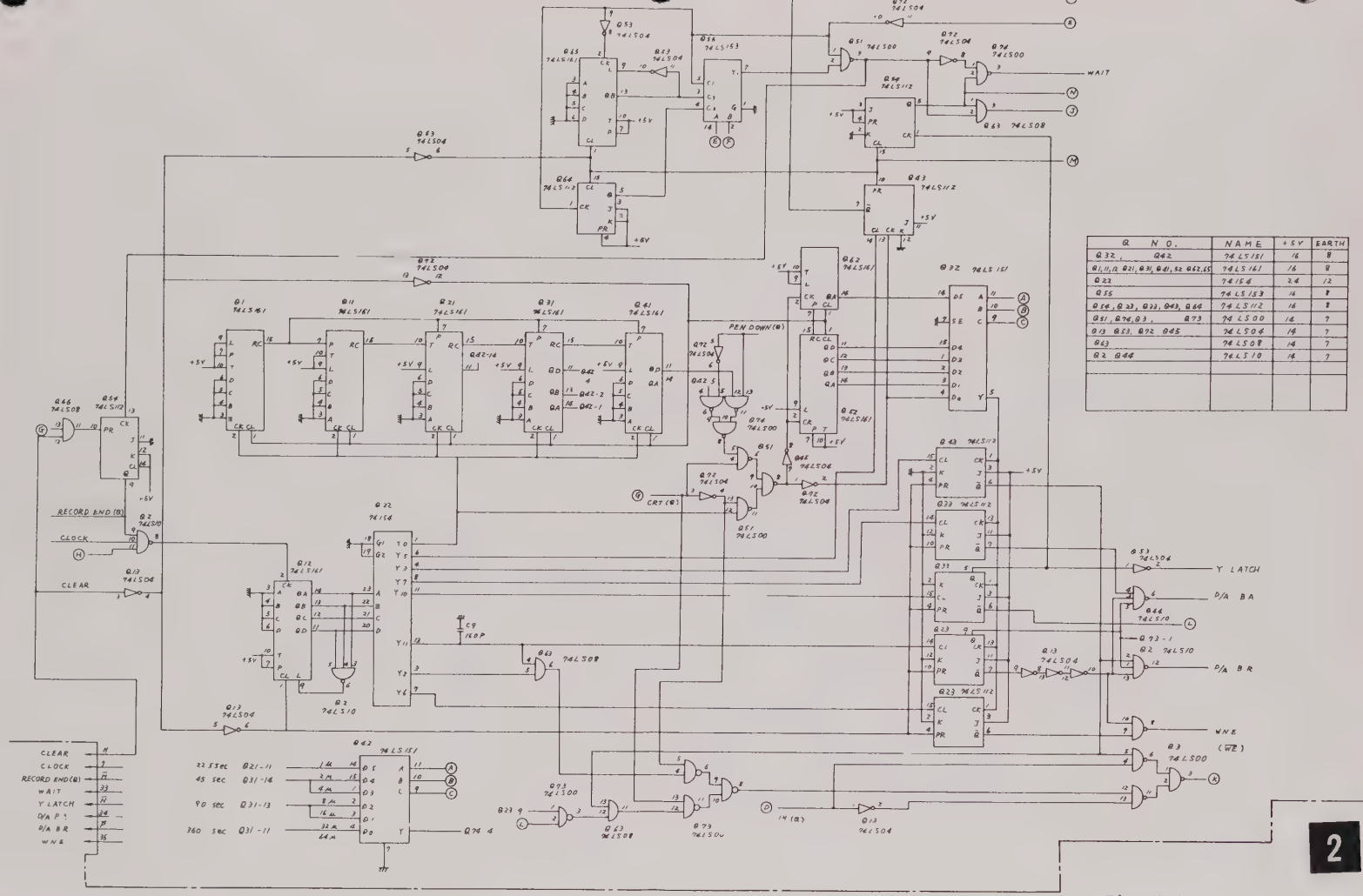


Fig. 6-4

Z1 CIRCUIT DIAGRAM OF D/A BOARD (42W9102 2/2)

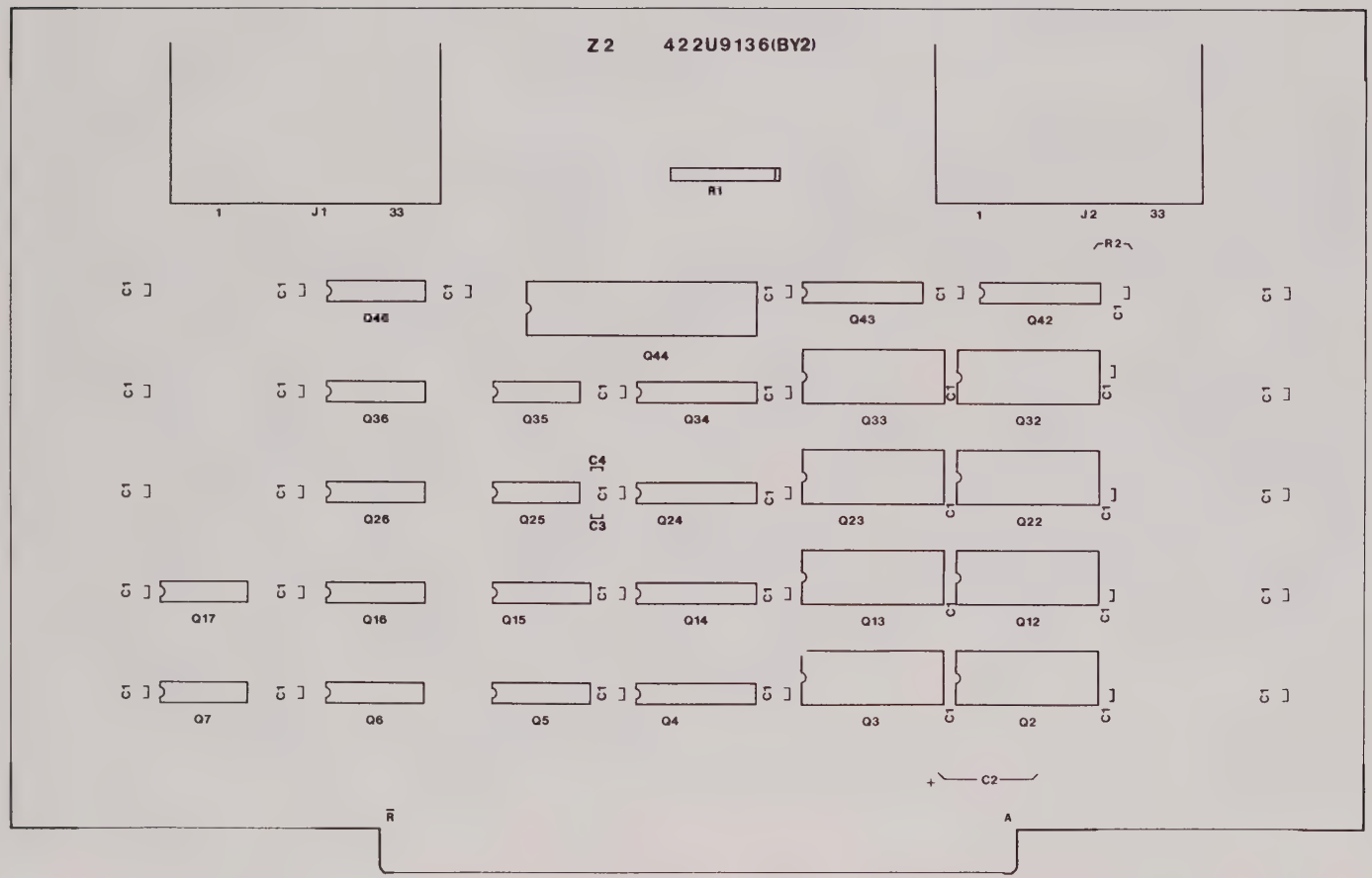
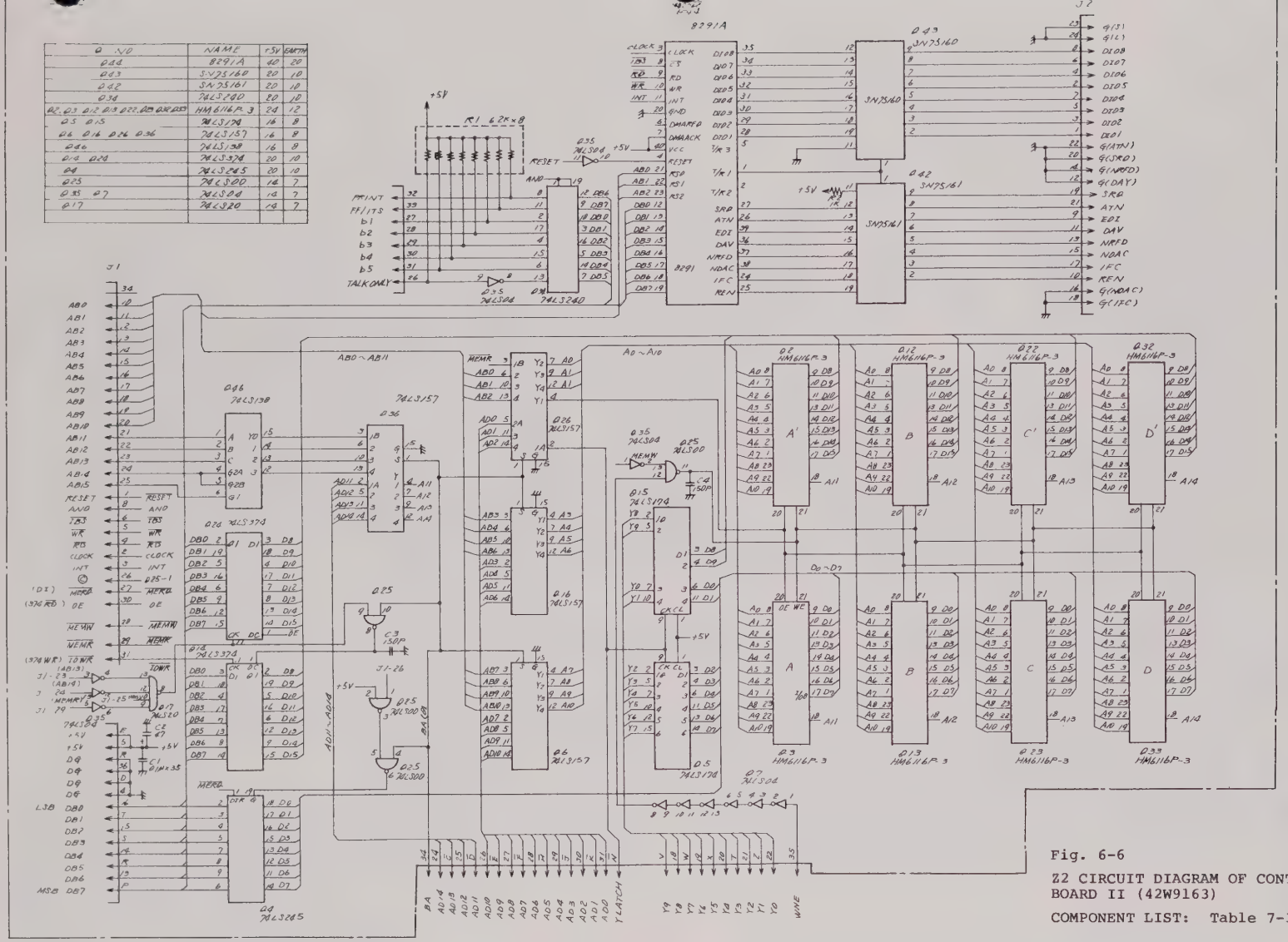


Fig. 6-5 Z2, CONTROL BOARD (II)



Q NO	NAME	+5V	EARTH
Q42	8291A	40	20
Q43	SN75160	20	10
Q42	SN75161	20	10
Q34	74LS240	20	10
Q2, Q3, Q12, Q13, Q22, Q23, Q32, Q33	HM6116P-3	24	12
Q5, Q15	74LS174	16	8
Q6, Q16, Q26, Q36	74LS157	16	8
Q46	74LS138	16	8
Q4, Q24	74LS374	20	10
Q8	74LS245	20	10
Q25	74LS00	14	7
Q35, Q7	74LS04	14	7
Q17	74LS20	14	7

Fig. 6-6

Z2 CIRCUIT DIAGRAM OF CONTROL BOARD II (42W9163)

COMPONENT LIST: Table 7-3

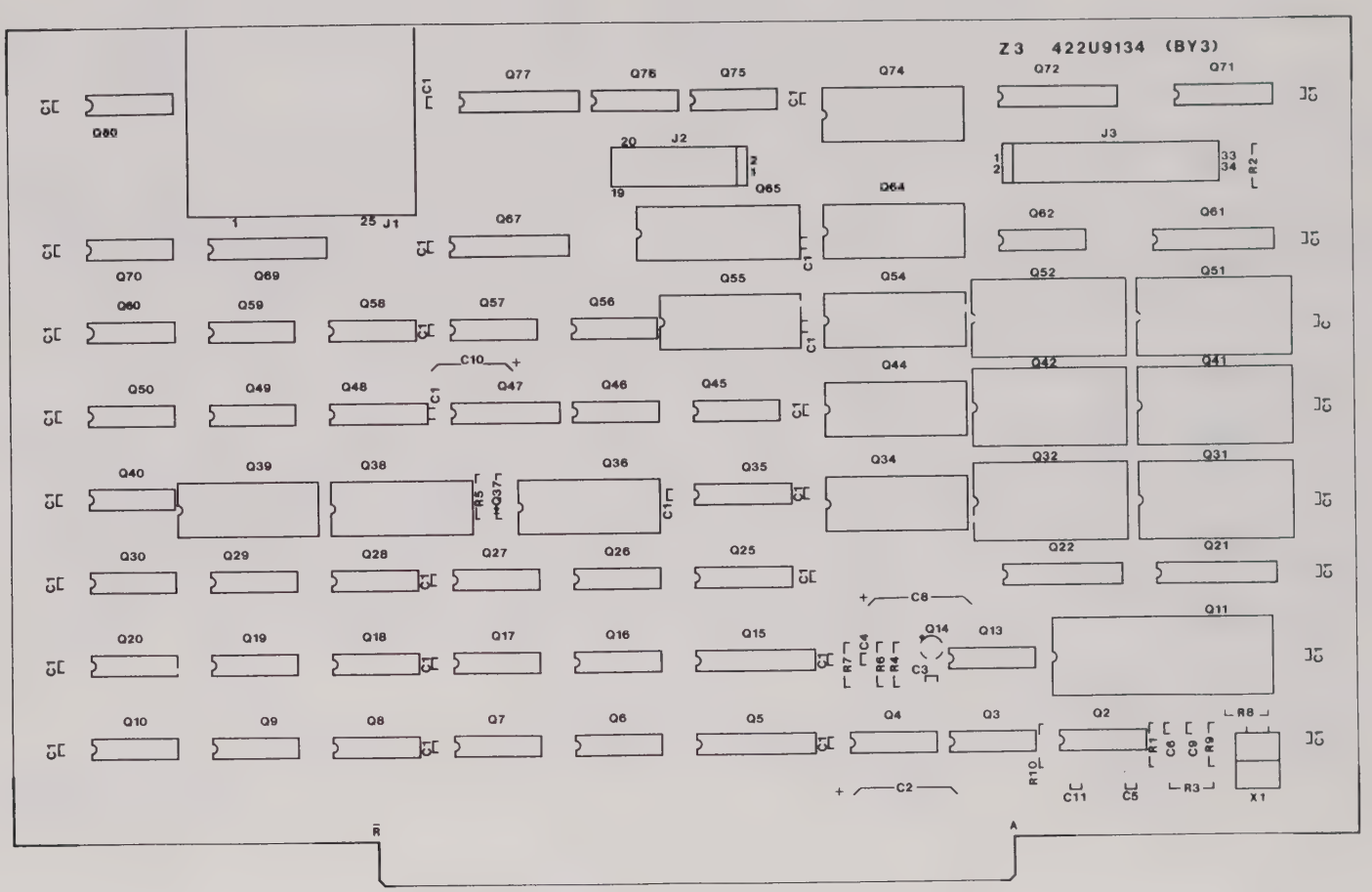


Fig. 6-7 Z3, CONTROL BOARD (I)

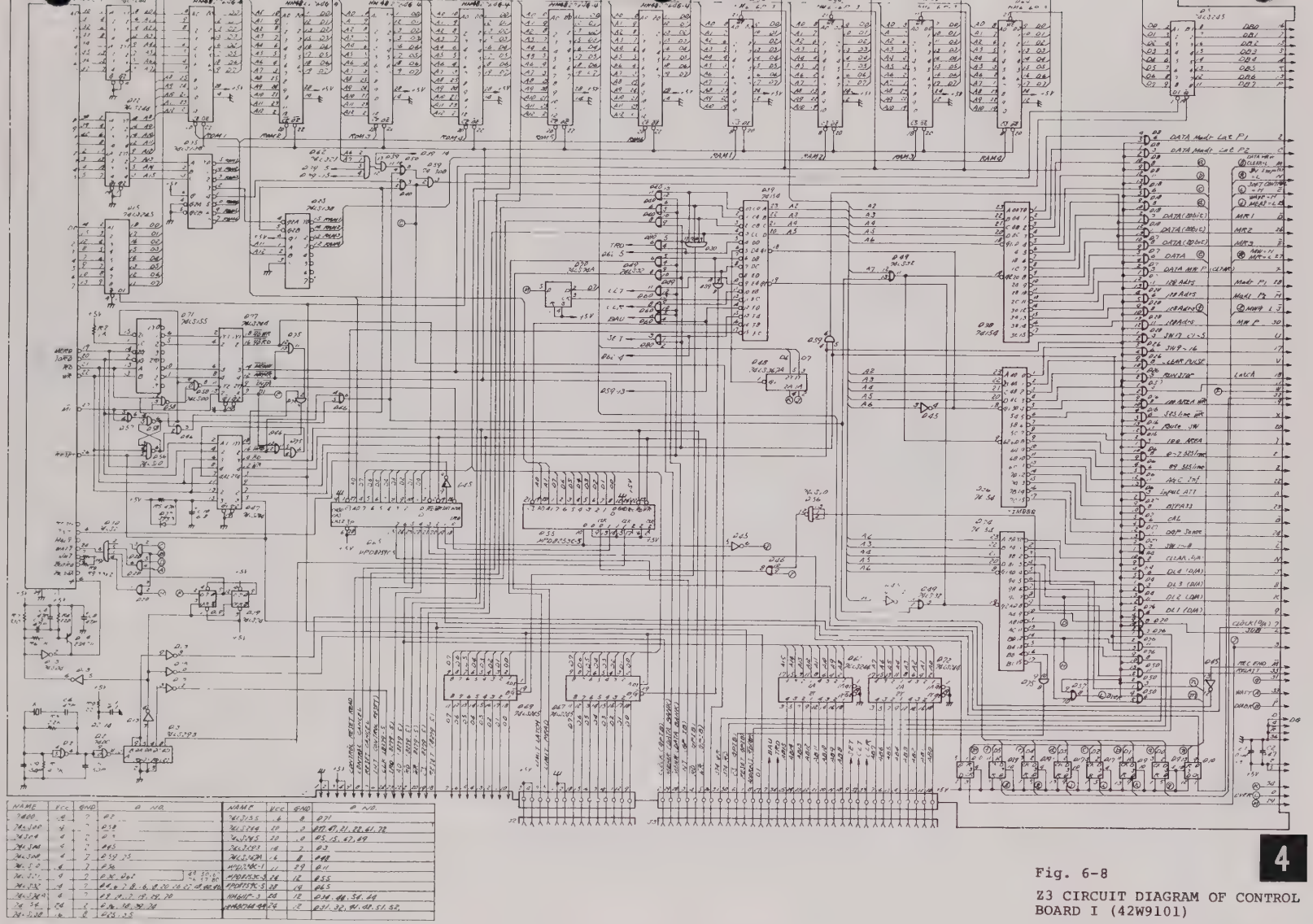


Fig. 6-8

Z3 CIRCUIT DIAGRAM OF CONTROL BOARD I (42W9101)

COMPONENT LIST: Table 7-4

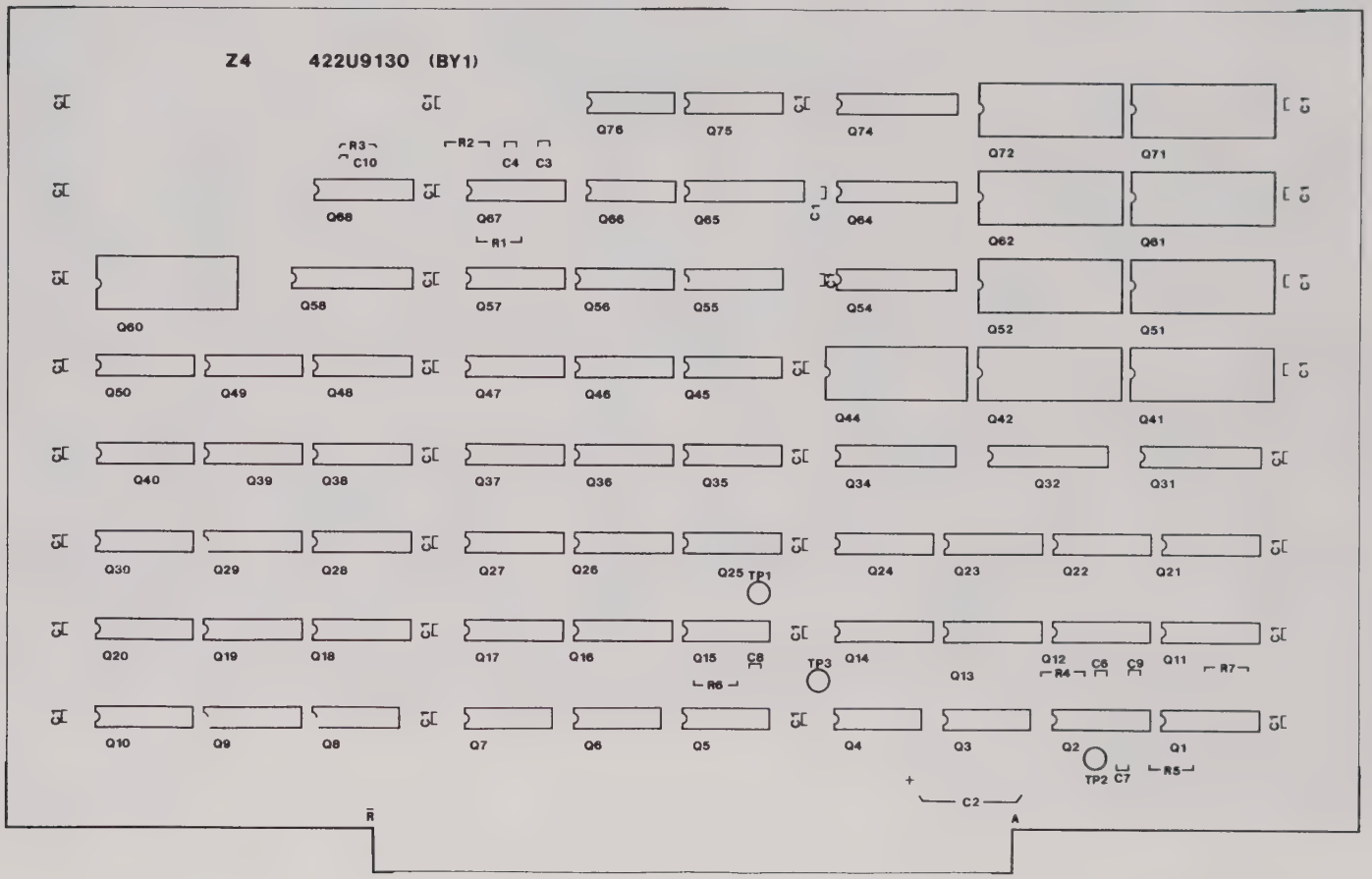
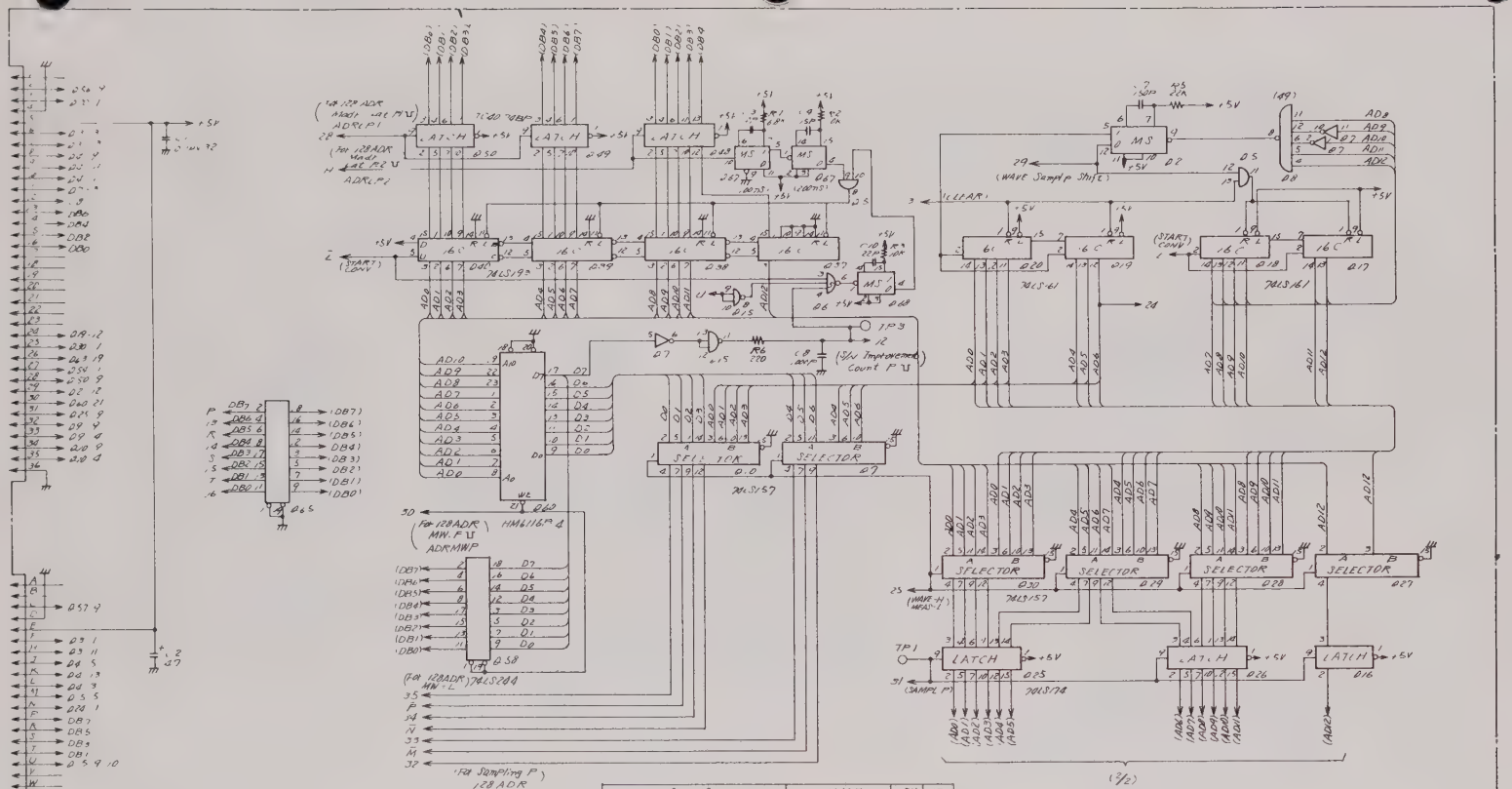


Fig. 6-9 Z4, I/O BOARD (I)

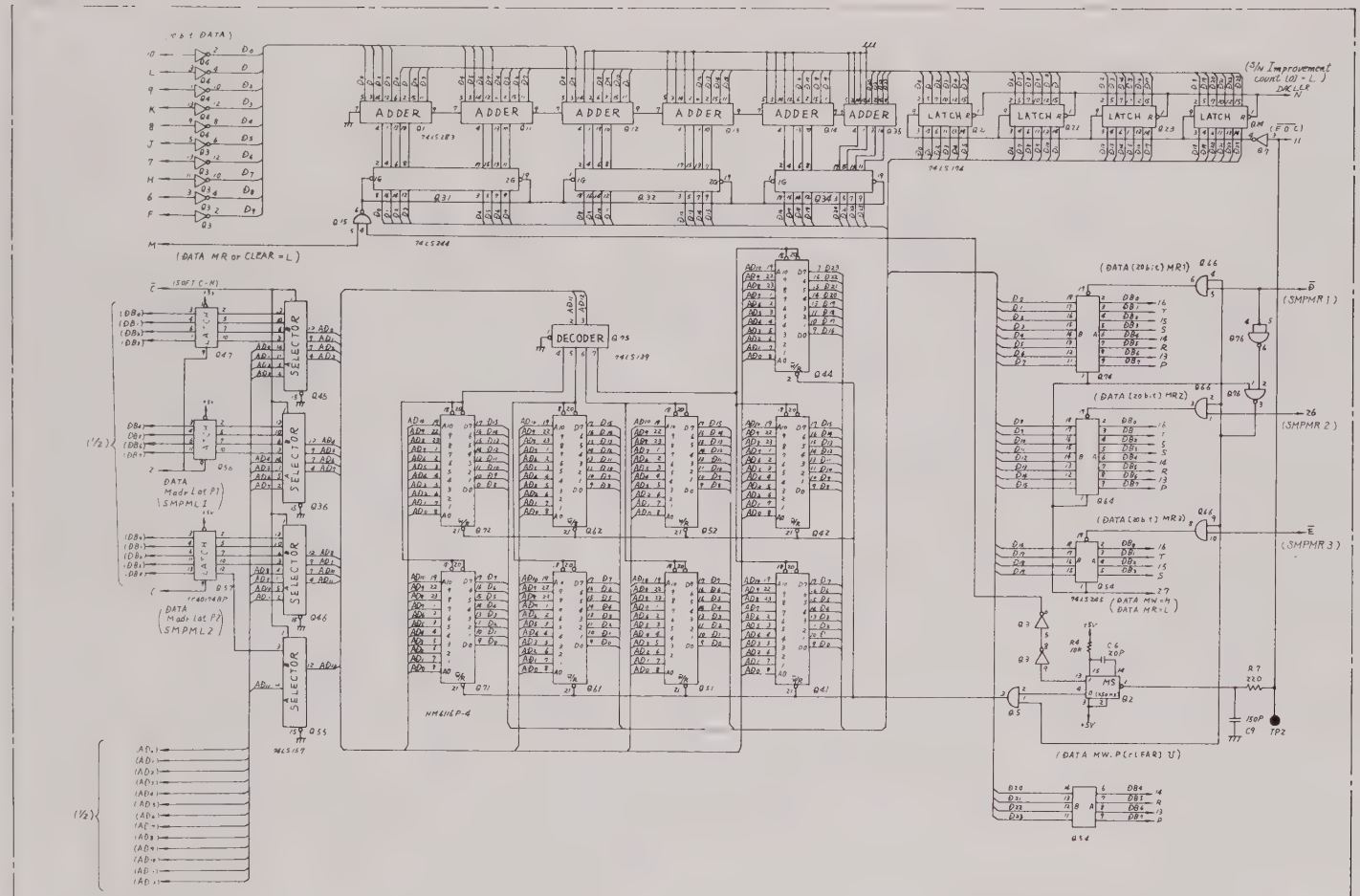


NO.	NAME	+5V	EARTH
15, 76	74LS00	14	7
3, 4, 7	74LS04	14	7
5, 66	74LS08	14	7
8	74LS30	14	7
2, 67, 68	74LS123	16	8
75	74LS139	16	8
9, 10, 27~30, 45, 46, 55, 56	74LS157	16	8
17~23	74LS161	16	8
6, 24~26	74LS174	16	8
58~69, 71	74LS193	16	8
31, 32, 34, 63, 64	74LS244	20	10
62, 63, 74	74LS245	20	10
1, 11~14, 35	74LS283	16	8
6	74LS10	14	7
47~50, 56, 57	TC40174BP	16	8
41, 42, 44, 51, 52, 60, 61, 62, 71, 72	HM6116P-4	24	12

Fig. 6-10

Z4 CIRCUIT DIAGRAM OF I/O BOARD I (42W9099 1/2)

COMPONENT LIST: Table 7-5



6

Fig. 6-11 Z4 CIRCUIT DIAGRAM OF I/O BOARD I (42W9099 2/2)

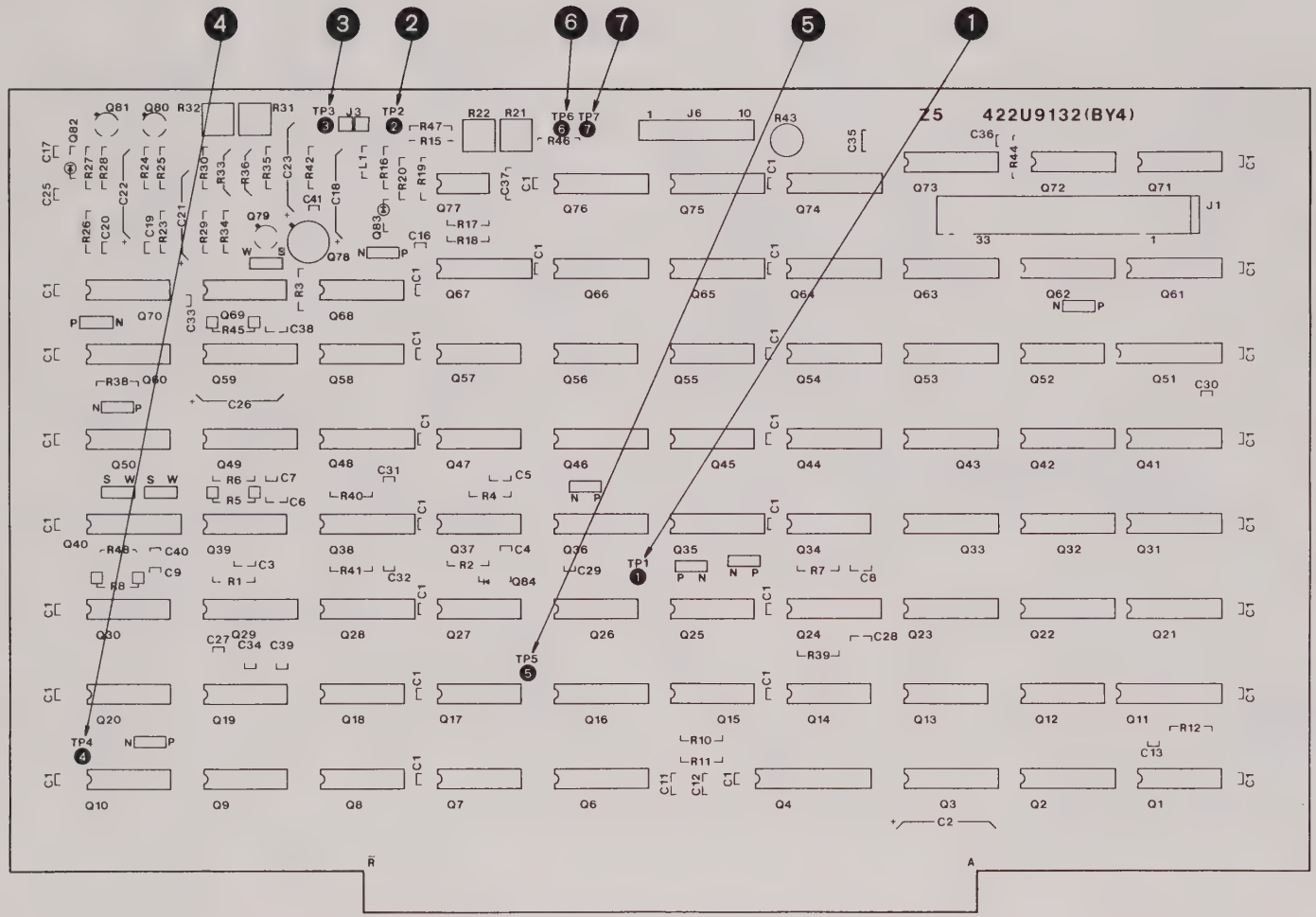


Fig. 6-12 Z5, I/O BOARD (II)

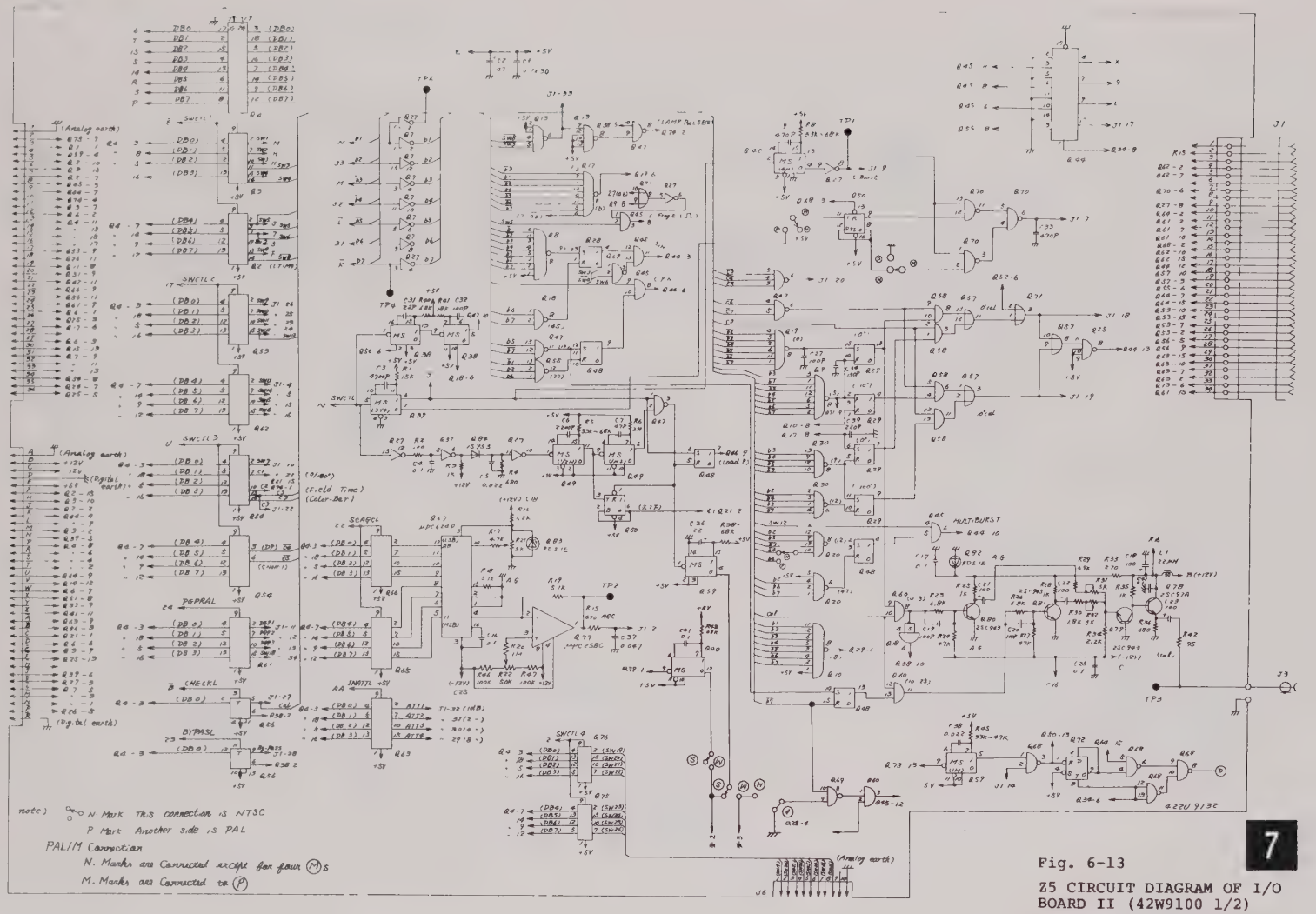
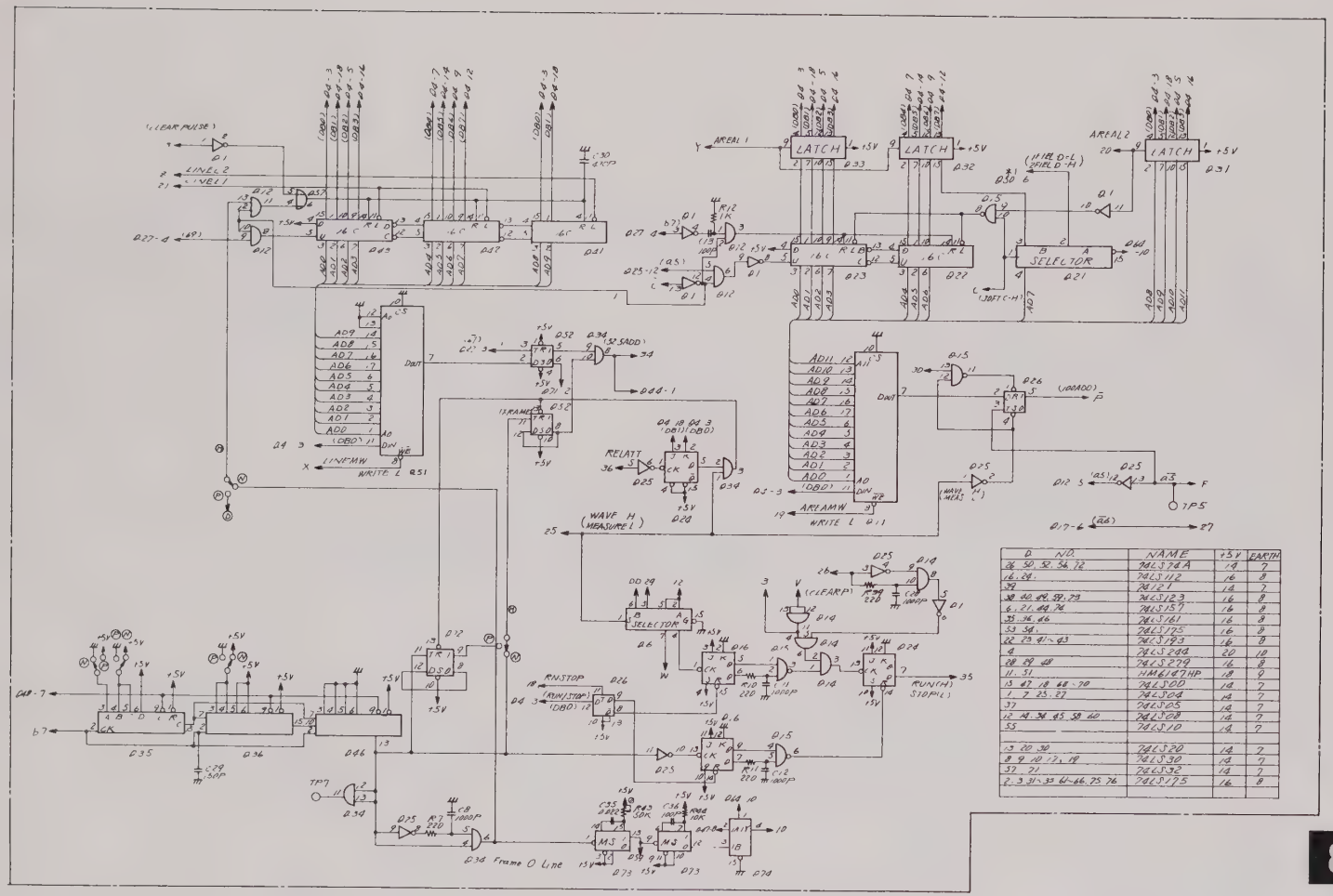


Fig. 6-13
Z5 CIRCUIT DIAGRAM OF I/O BOARD II (42W9100 1/2)
COMPONENT LIST: Table 7-6



D NO.	NAME	+5V	EARTH
26 50 52 54 72	74LS374A	19	7
16 64	74LS112	16	8
54	74121	14	7
38 60 68 70 79	74LS123	16	8
6 21 66 74	74LS157	16	8
35 36 46	74LS161	16	8
53 54	74LS175	16	8
22 23 41 63	74LS193	16	8
4	74LS240	20	10
28 58 48	74LS279	16	8
11 51	HM6147HP	18	9
13 47 18 68 70	74LS00	14	7
1 7 25 27	74LS04	14	7
37	74LS05	14	7
12 14 34 45 58 60	74LS08	14	7
55	74LS10	14	7
13 20 30	74LS20	14	7
8 9 10 17 19	74LS30	14	7
32 31	74LS32	14	7
2 3 31 33 61 66 75 76	74LS175	16	8

8

Fig. 6-14

Z5 CIRCUIT DIAGRAM OF I/O BOARD II (42W9100 2/2)

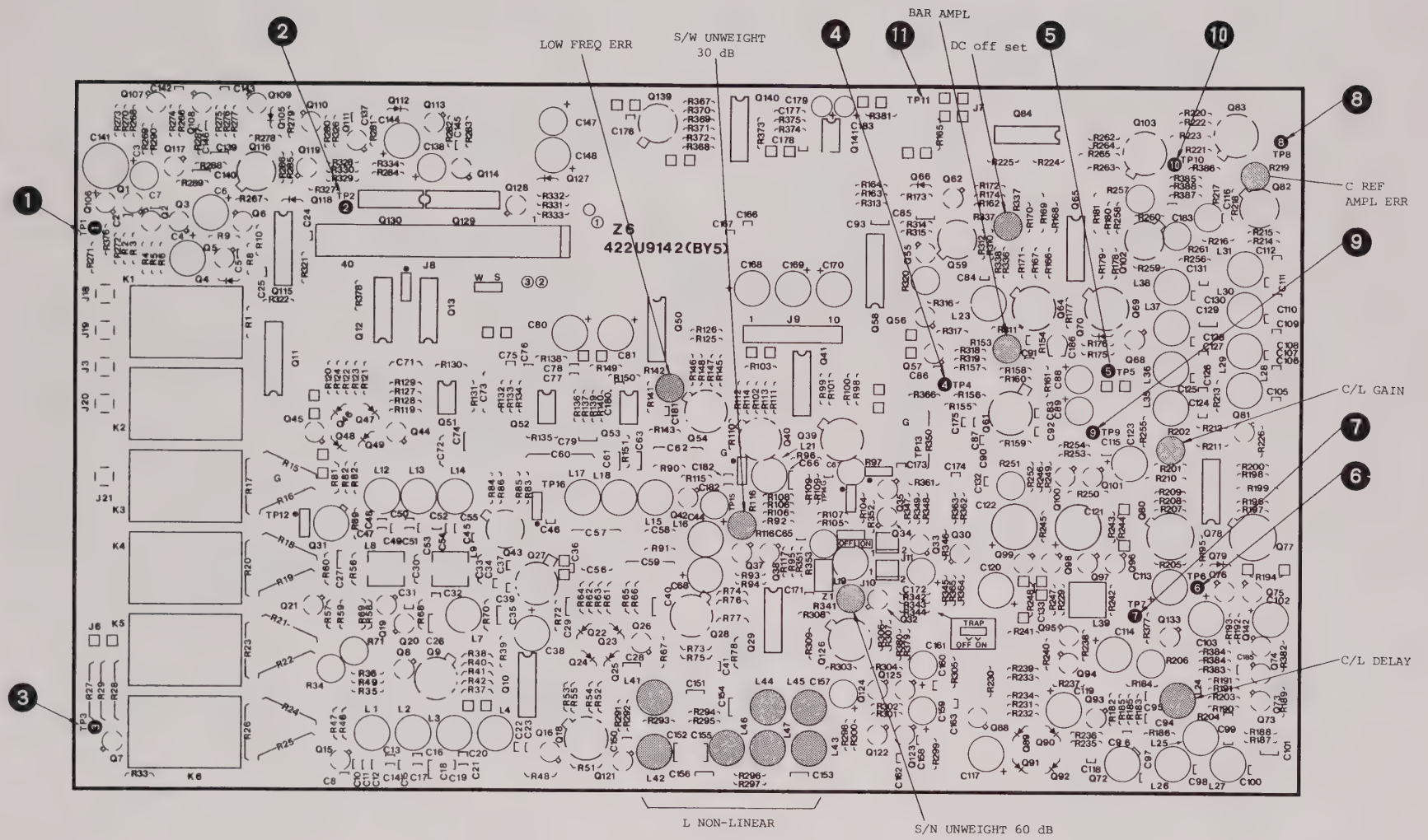


Fig. 6-15 Z6, ANALOG BOARD (I)

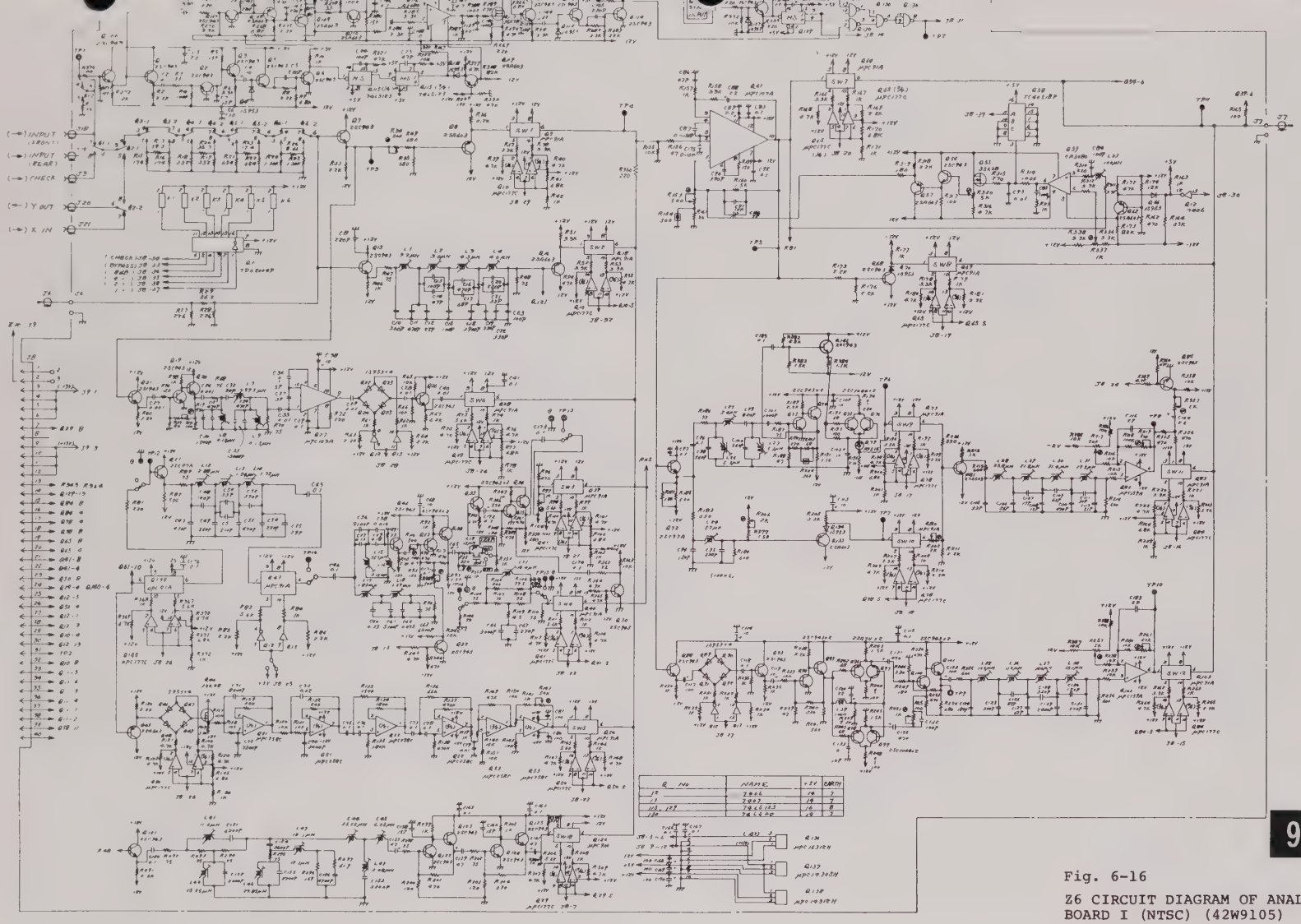


Fig. 6-16

Z6 CIRCUIT DIAGRAM OF ANALOG BOARD I (NTSC) (42W9105)

COMPONENT LIST: Table 7-7

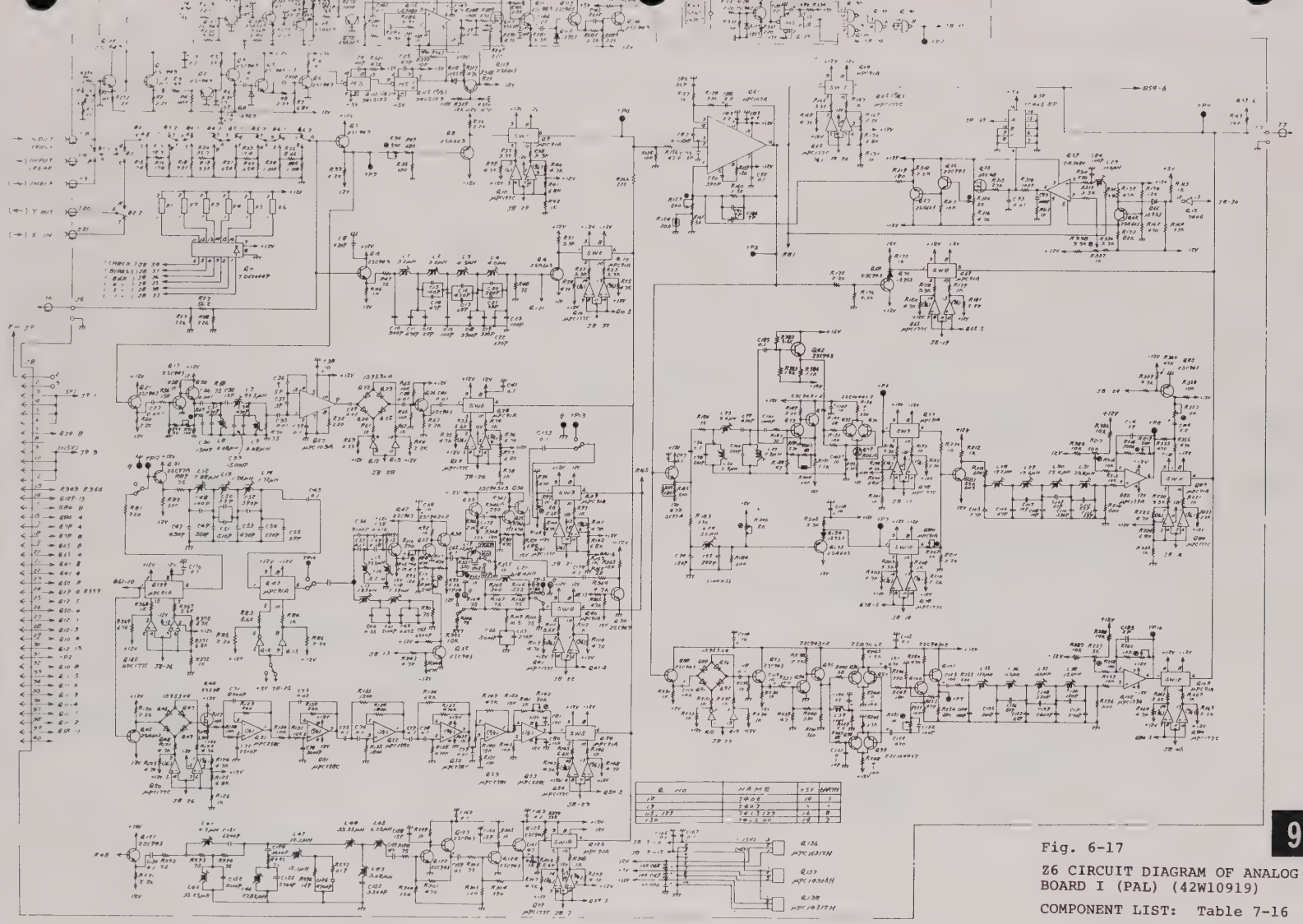


Fig. 6-17

Z6 CIRCUIT DIAGRAM OF ANALOG BOARD I (PAL) (42W10919)

COMPONENT LIST: Table 7-16

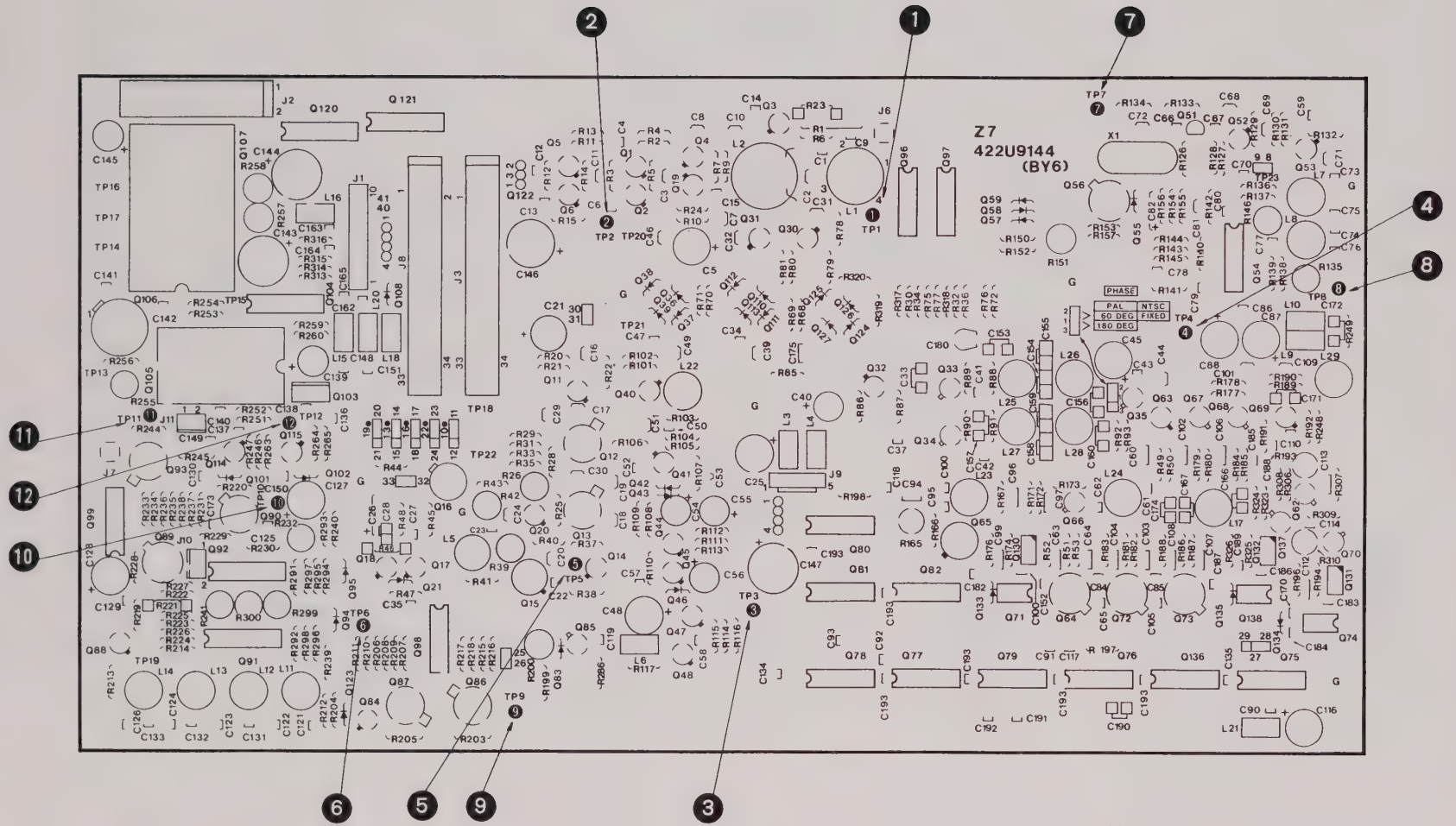
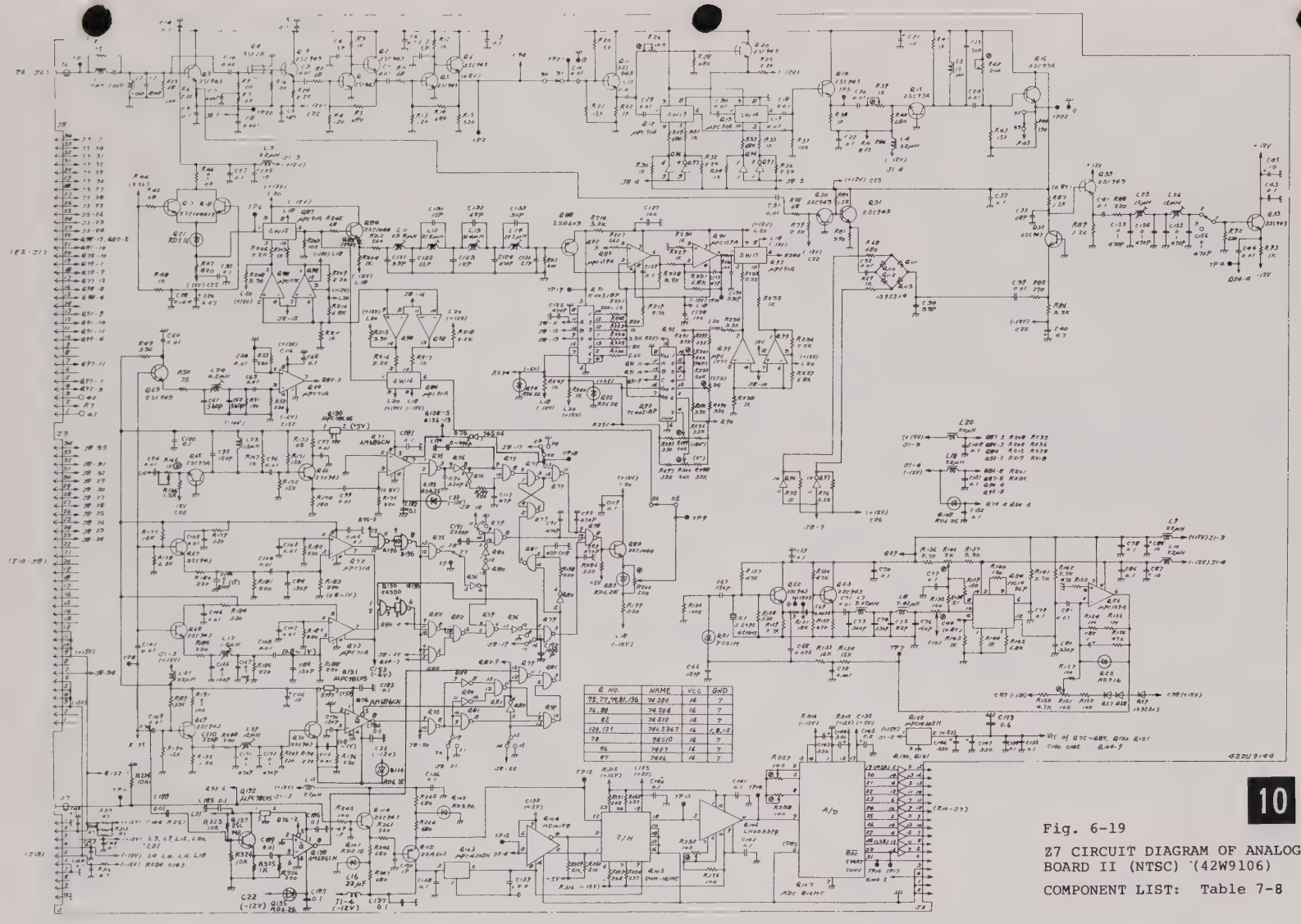


Fig. 6-18 Z7, ANALOG BOARD (II)



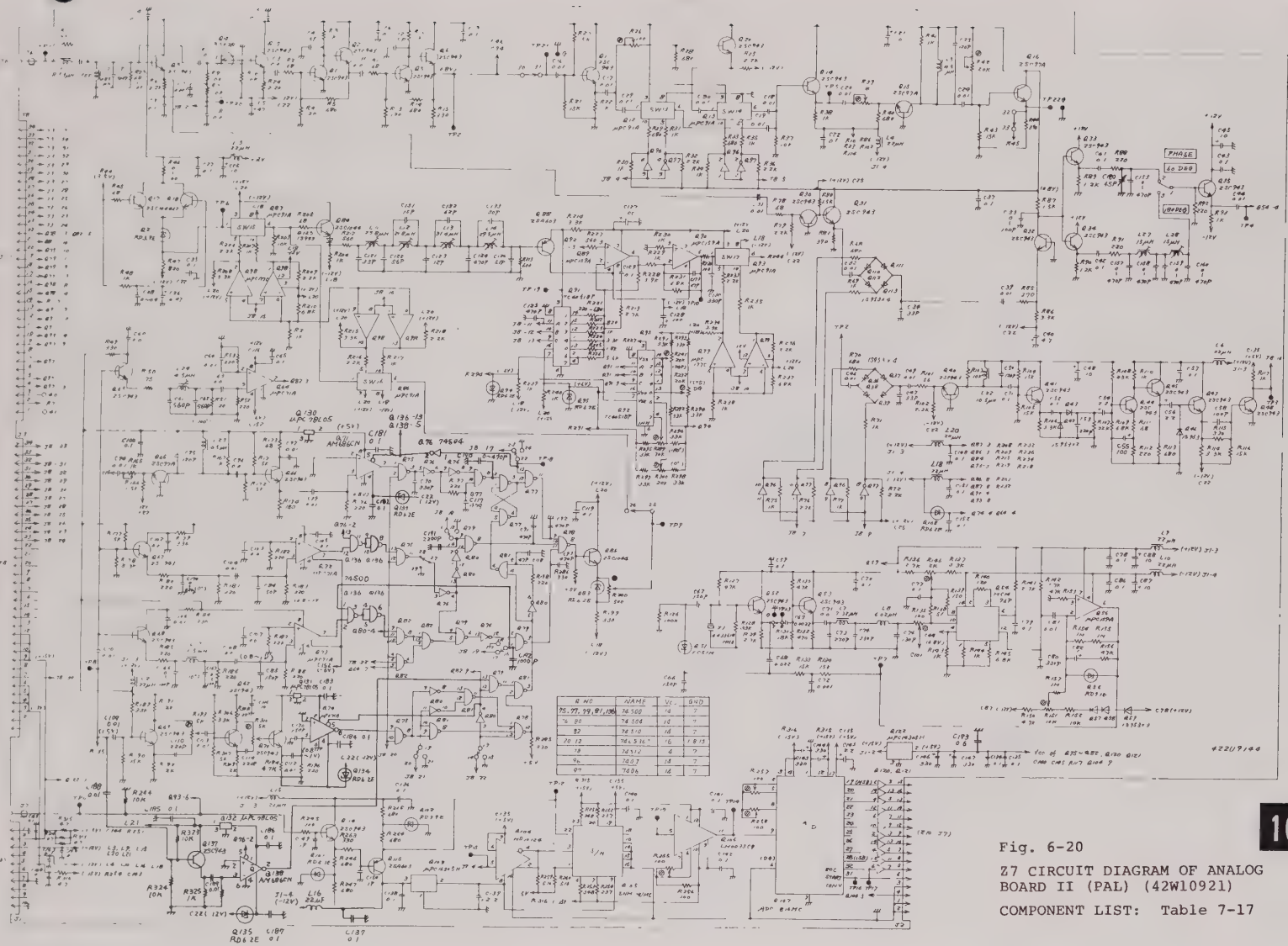
Q NO.	NAME	VCC	GND
73, 77, 79, 81, 136	74 S00	14	7
74, 80	74 S04	14	7
82	74 S10	14	7
120, 121	74LS367	16	8, 8
78	74S10	14	7
96	7407	14	7
97	7406	14	7

10

Fig. 6-19

Z7 CIRCUIT DIAGRAM OF ANALOG BOARD II (NTSC) (42W9106)

COMPONENT LIST: Table 7-8



10

Fig. 6-20

Z7 CIRCUIT DIAGRAM OF ANALOG BOARD II (PAL) (42W10921)

COMPONENT LIST: Table 7-17

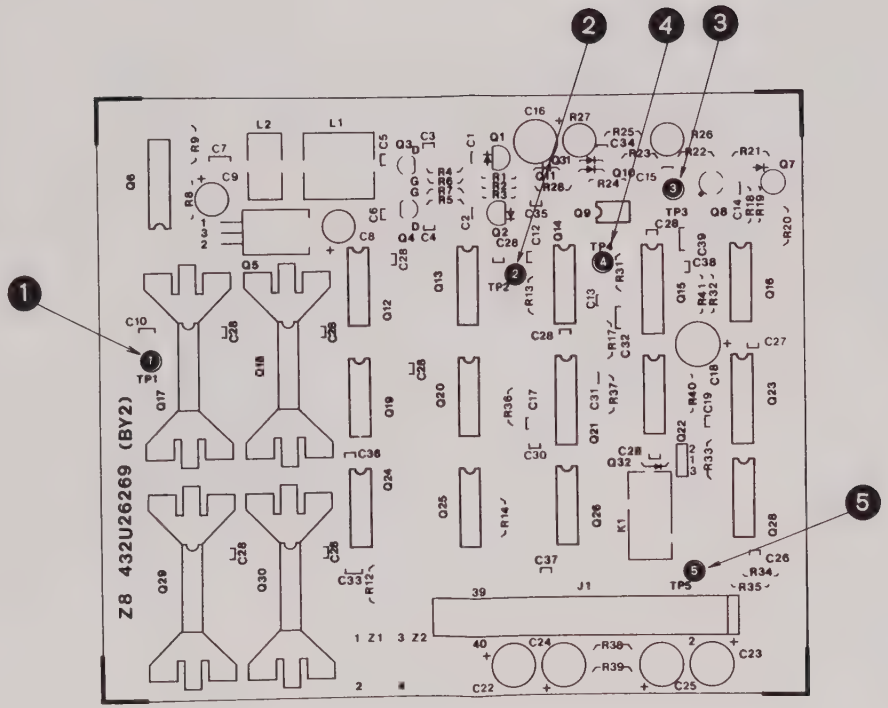
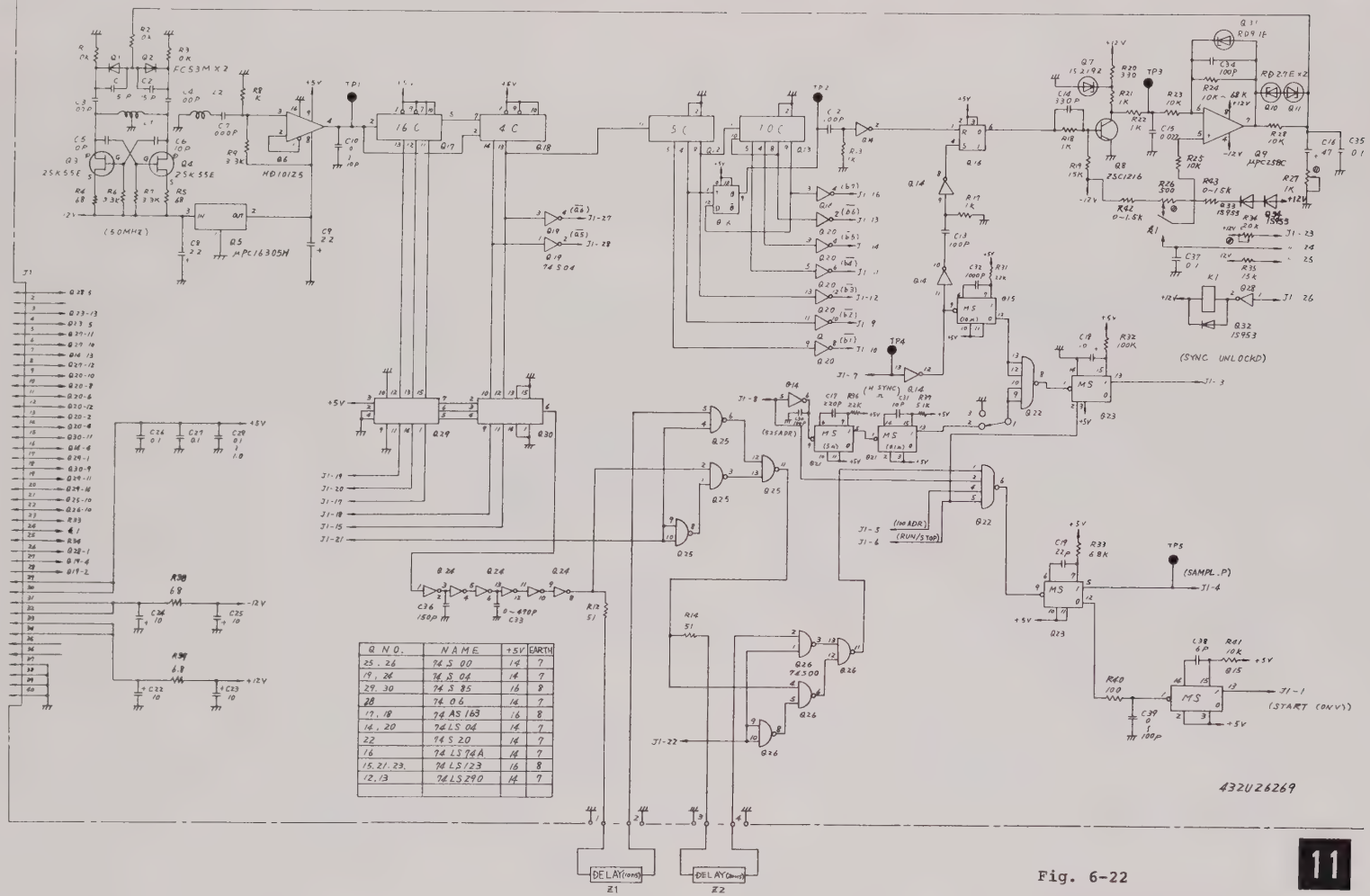


Fig. 6-21 Z8, 50 MHz CLOCK BOARD



Q NO.	NAME	+5V	EARTH
25 . 26	74 S 00	14	7
19 , 26	74 S 04	14	7
29 . 30	74 S 85	16	8
28	74 06	14	7
17 . 18	74 AS 163	16	8
16 , 20	74 LS 04	14	7
22	74 S 20	14	7
16	74 LS 74 A	14	7
15. 21. 23.	74 LS 123	16	8
12. 13	74 LS 290	14	7

11

Fig. 6-22

Z8 CIRCUIT DIAGRAM OF 50 MHz CLOCK BOARD (42W9107)

COMPONENT LIST: Table 7-9

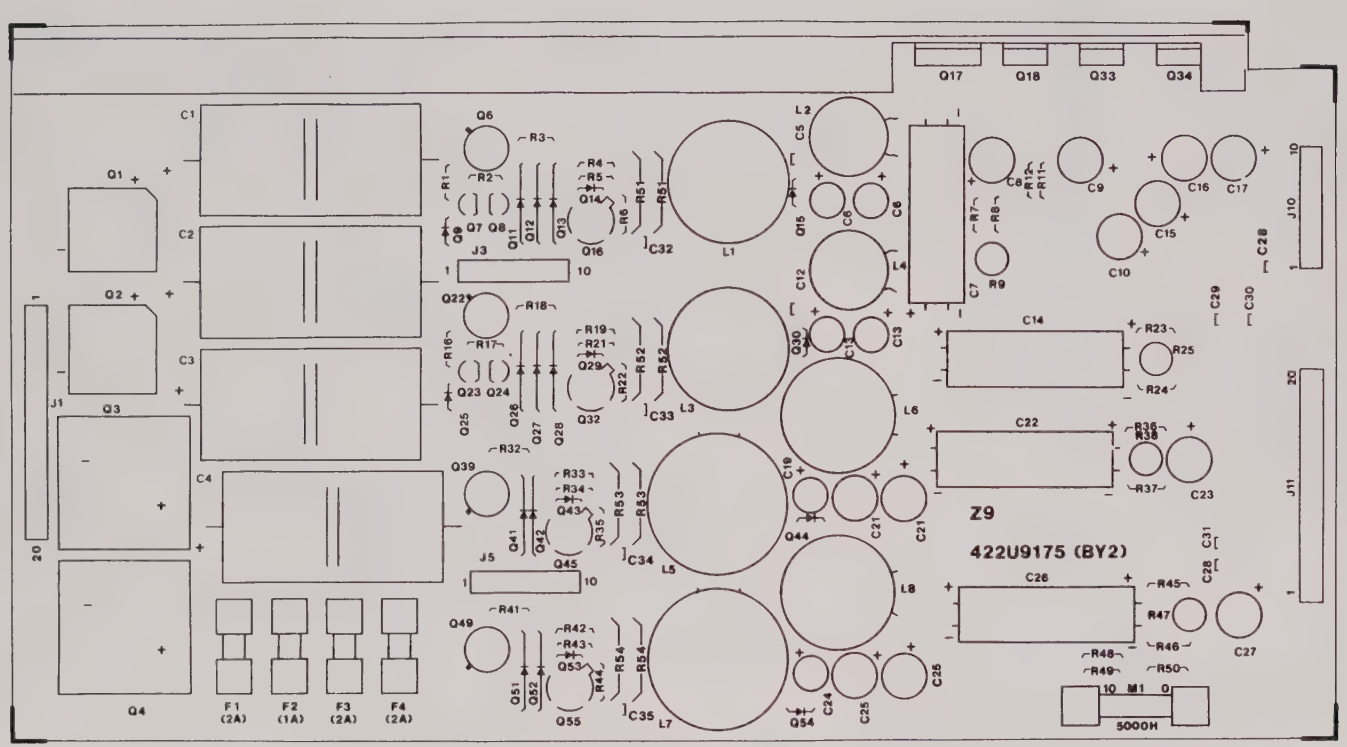


Fig. 6-23 Z9, POWER BOARD

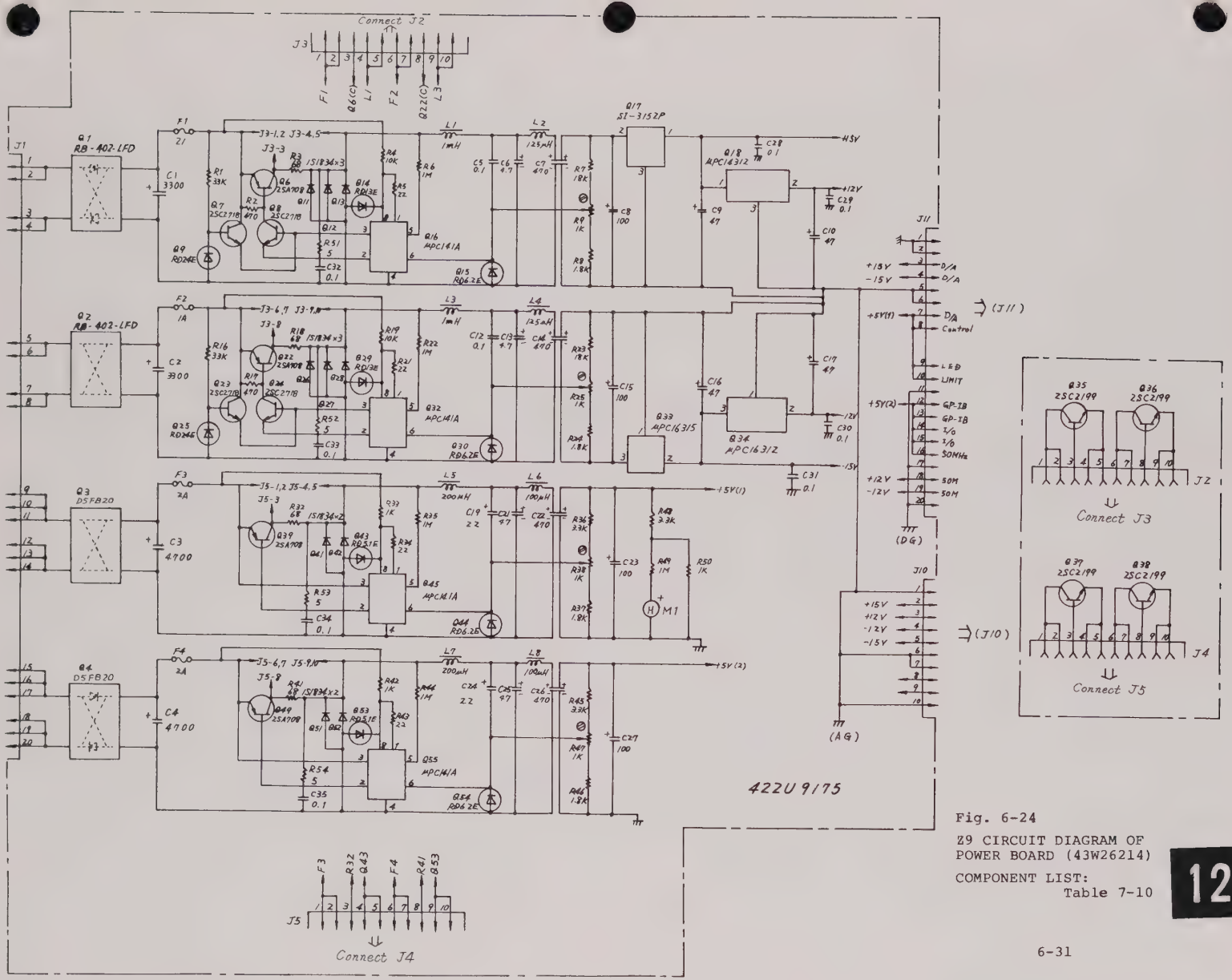


Fig. 6-24

Z9 CIRCUIT DIAGRAM OF POWER BOARD (43W26214)

COMPONENT LIST: Table 7-10

12

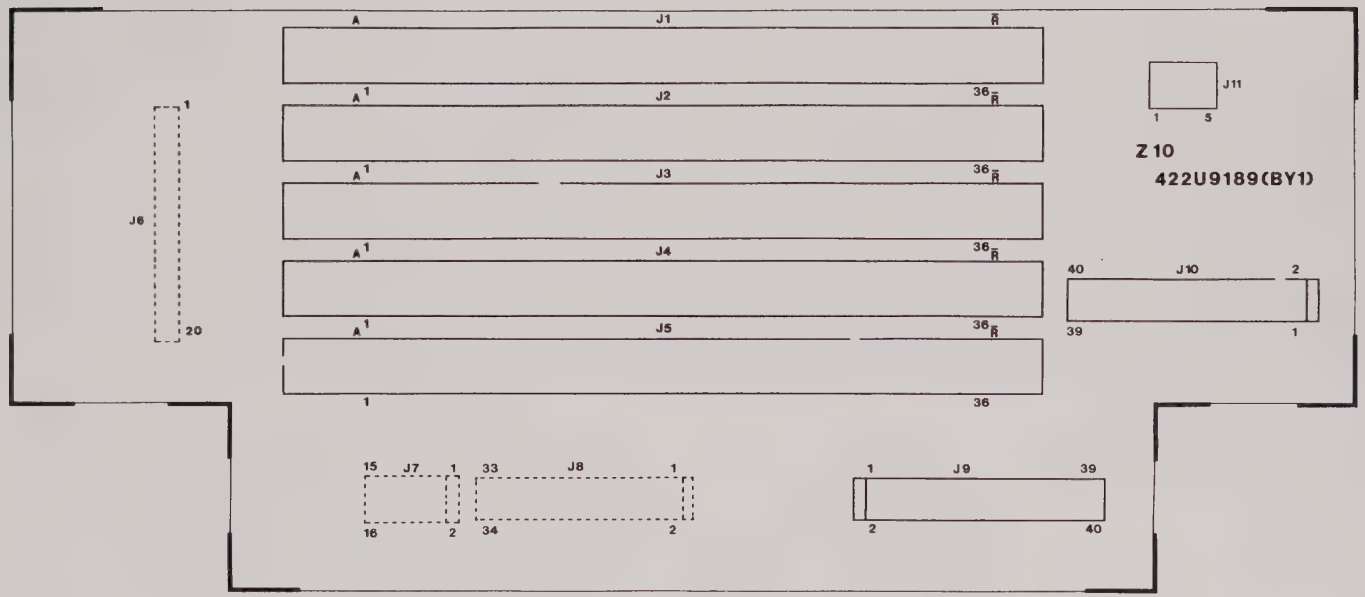


Fig. 6-25 Z10 MOTHER BOARD

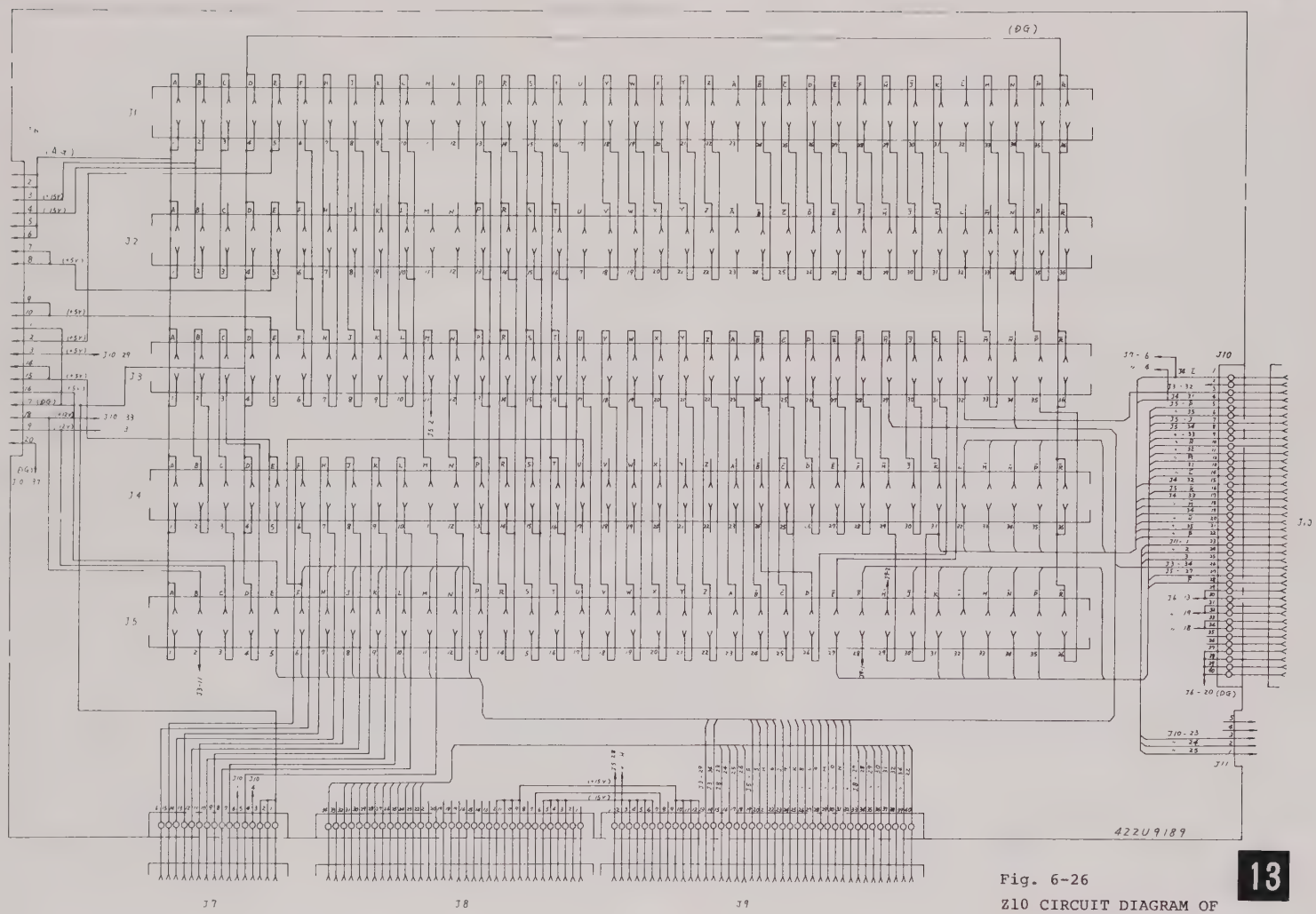


Fig. 6-26

Z10 CIRCUIT DIAGRAM OF MOTHER BOARD (42W9098)

COMPONENT LIST: Table 7-11

13

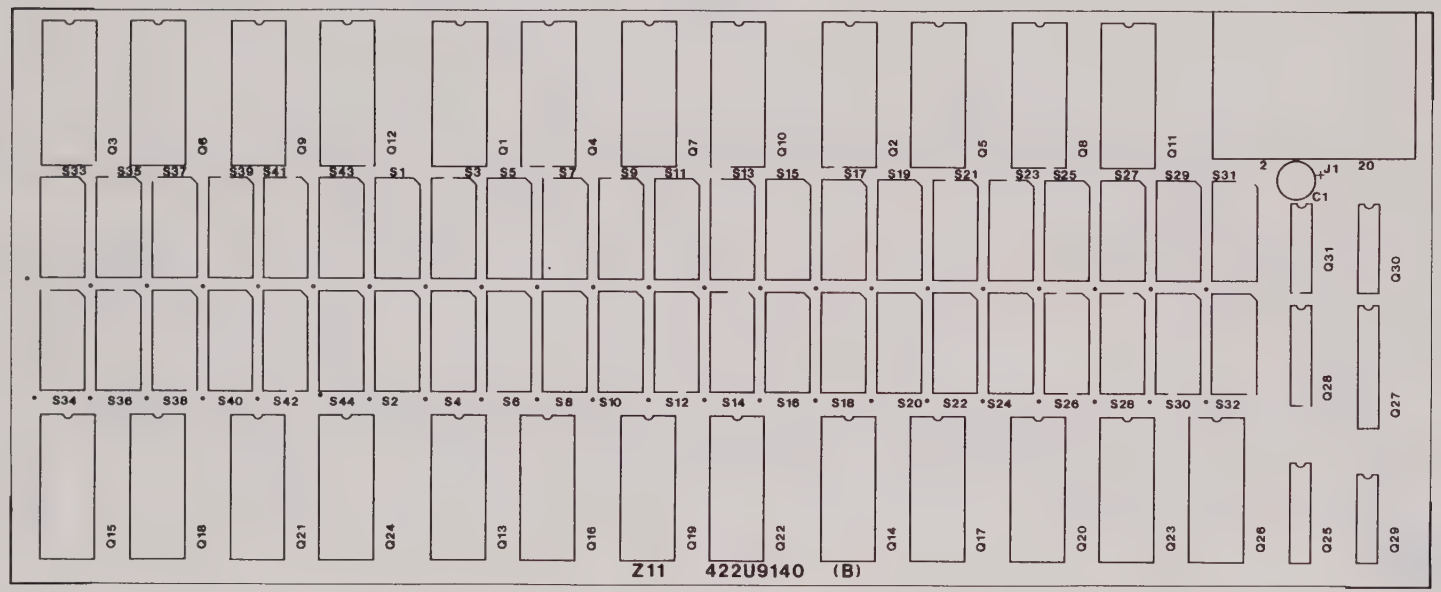
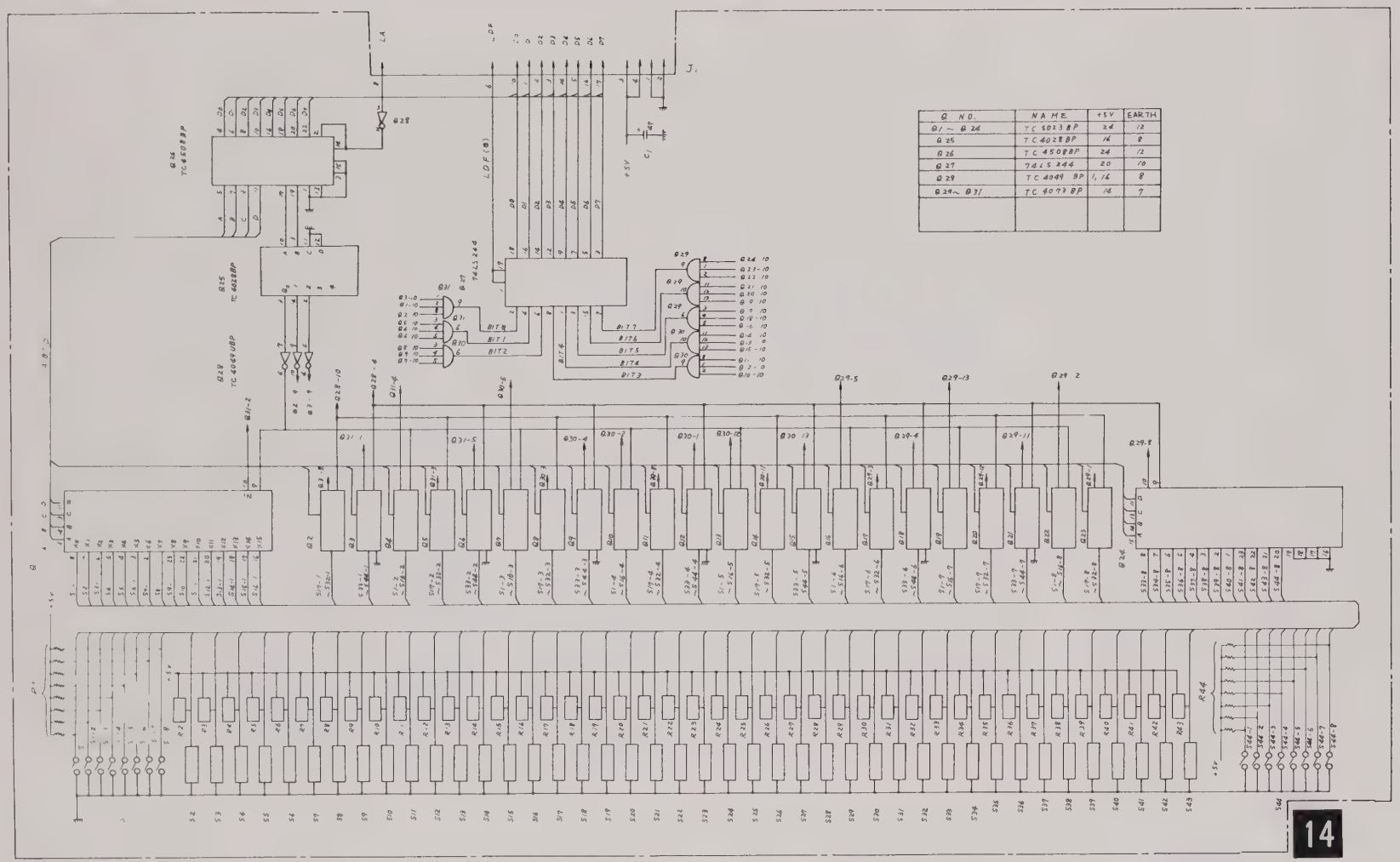


Fig. 6-27 Z11 LIMIT BOARD



COMPONENT LIST: Table 7-12

Fig. 6-28 Z11 CIRCUIT DIAGRAM OF LIMIT BOARD (42W9104 1/2)

S1~44. R1~44 CONNECTED LINE TABLE

F.B.NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
1	R2-9	R2-8	R2-7	R2-6	R2-5	R2-4	R2-3	R2-2	R2-1	R1-2	R1-3	R1-4	R1-5	R1-6	R1-7	R1-8
2	4-9	4-8	4-7	4-6	4-5	4-4	4-3	4-2	3-2	3-3	3-4	3-5	3-6	3-7	3-8
3	6-9	6-8	6-7	6-6	6-5	6-4	7-3	6-2	5-2	5-3	5-4	5-5	5-6	5-7	5-8
4	8-9	8-8	8-7	8-6	8-5	8-4	10-3	8-2	7-2	7-3	7-4	7-5	7-6	7-7	7-8
5	10-9	10-8	10-7	10-6	10-5	10-4	13-3	10-2	9-2	9-3	9-4	9-5	9-6	9-7	9-8
6	12-9	12-8	12-7	12-6	12-5	12-4	16-3	12-2	11-2	11-3	11-4	11-5	11-6	11-7	11-8
7	14-9	14-8	14-7	14-6	14-5	14-4	14-3	14-2	13-2	13-3	13-4	13-5	13-6	13-7	13-8
8	16-9	16-8	16-7	16-6	16-5	16-4	16-3	16-2	15-2	15-3	15-4	15-5	15-6	15-7	15-8

F.B.NO.	S16	S17	S18	S19	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30
1	R1-9	R17-9	R17-8	R17-7	R17-6	R17-5	R17-4	R17-3	R17-2	R18-2	R18-3	R18-4	R18-5	R18-6	R18-7
2	3-9	19-9	19-8	19-7	9-6	19-5	19-4	19-3	19-2	20-2	20-3	20-4	20-5	20-6	20-7
3	5-9	21-9	21-8	21-7	21-6	21-5	21-4	21-3	21-2	22-2	22-3	22-4	22-5	22-6	22-7
4	7-9	23-9	23-8	23-7	23-6	23-5	23-4	23-3	23-2	24-2	24-3	24-4	24-5	24-6	24-7
5	9-9	25-9	25-8	25-7	25-6	25-5	25-4	25-3	25-2	26-2	26-3	26-4	26-5	26-6	26-7
6	11-9	27-9	27-8	27-7	27-6	27-5	27-4	27-3	27-2	28-2	28-3	28-4	28-5	28-6	28-7
7	13-9	29-9	29-8	29-7	29-6	29-5	29-4	29-3	29-2	30-2	30-3	30-4	30-5	30-6	30-7
8	15-9	31-9	31-8	31-7	31-6	31-5	31-4	31-3	31-2	32-2	32-3	32-4	32-5	32-6	32-7

F.B.NO.	S31	S32	S33	S34	S35	S36	S37	S38	S39	S40	S41	S42	S43	S44	
1	R2-8	R18-9	R33-4	R33-5	R33-7	R33-6	R33-5	R33-4	R33-3	R33-2	R34-2	R34-3	R34-4	R34-5	
2	20-8	20-9	43-9	43-8	43-7	43-6	43-5	43-4	43-3	43-2	44-2	44-3	44-4	44-5	
3	22-8	22-9	35-9	35-8	35-7	35-6	35-5	35-4	35-3	35-2	36-2	36-3	36-4	36-5	
4	24-8	24-9	37-9	37-8	37-7	37-6	37-5	37-4	37-3	37-2	38-2	38-3	38-4	38-5	
5	26-8	26-9	45-9	45-8	45-7	45-6	45-5	45-4	45-3	45-2	46-2	46-3	46-4	46-5	
6	28-8	28-9	47-9	47-8	47-7	47-6	47-5	47-4	47-3	47-2	48-2	48-3	48-4	48-5	
7	30-8	30-9	39-9	39-8	39-7	39-6	39-5	39-4	39-3	39-2	40-2	40-3	40-4	40-5	
8	32-8	32-9	41-9	41-8	41-7	41-6	41-5	41-4	41-3	41-2	42-2	42-3	42-4	42-5	

15

Fig. 6-29

Z11 CIRCUIT DIAGRAM OF LIMIT BOARD (42W9104 2/2)

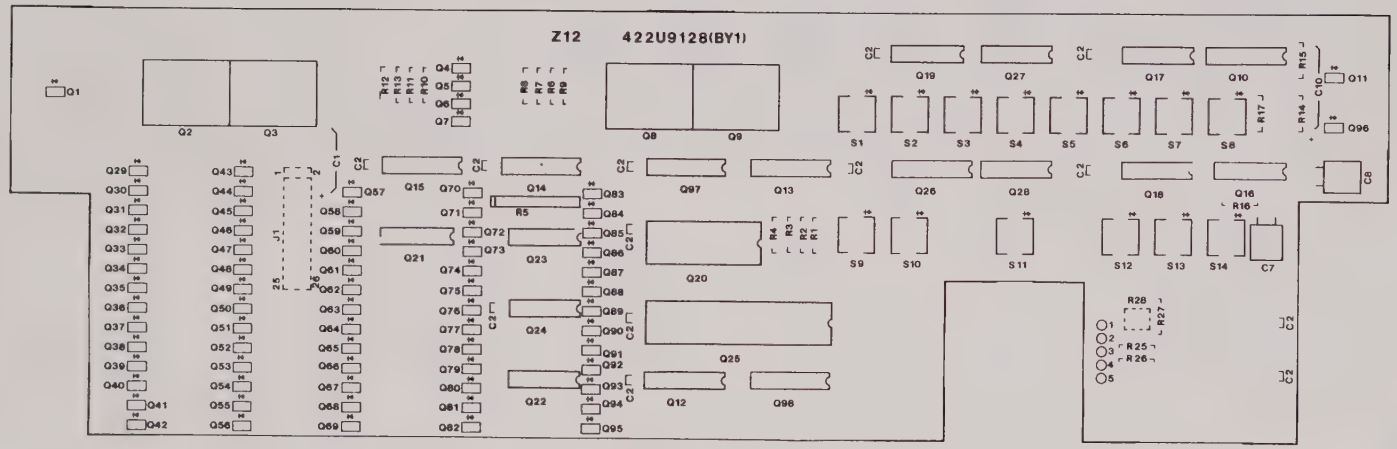
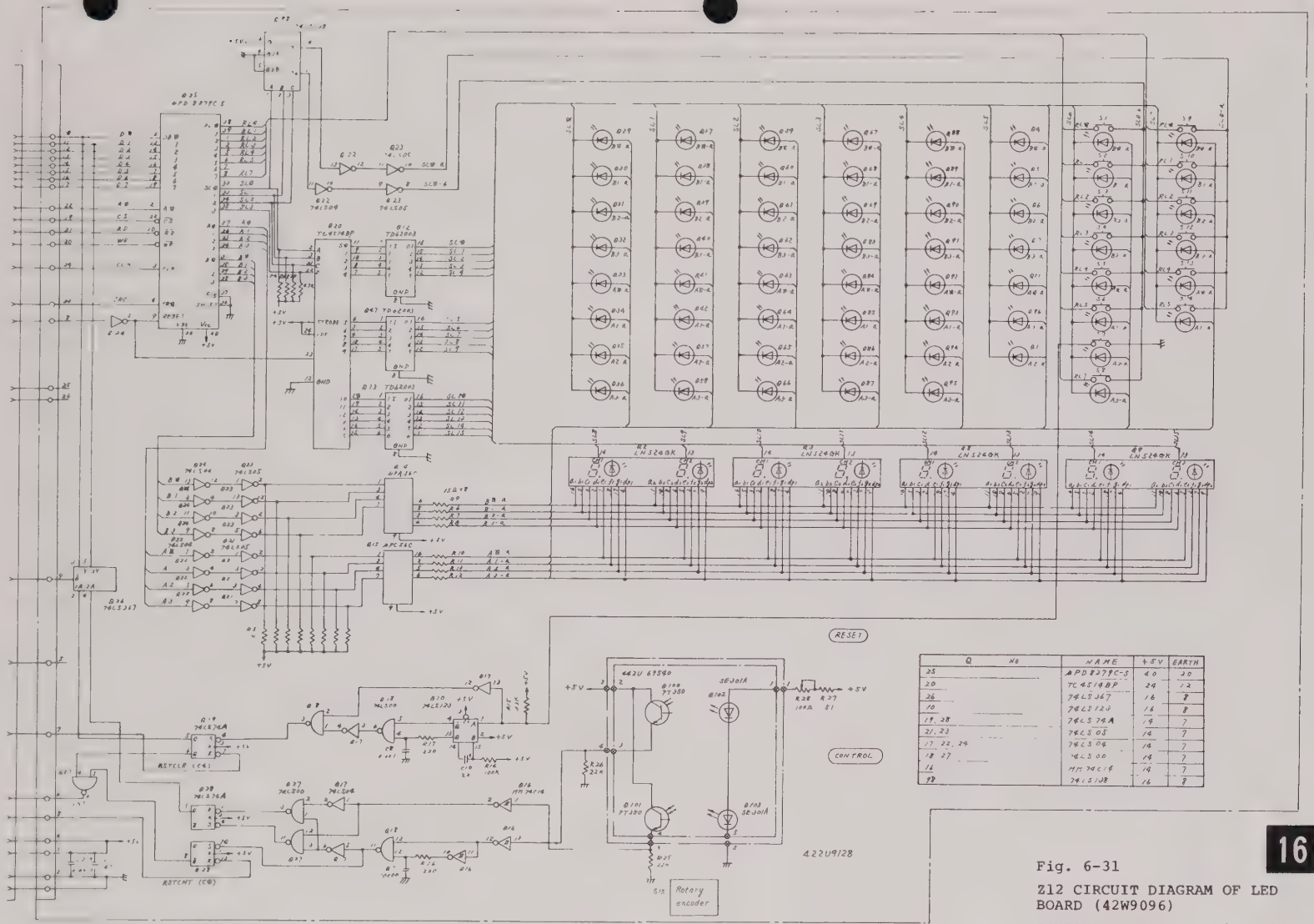


Fig. 6-30 Z12, LED BOARD



Q No	NAME	+5V	EARTH
25	APD8279C-5	40	20
20	TC4514BP	24	12
26	74LS367	16	8
10	74LS123	16	8
19, 28	74LS74A	14	7
21, 23	74LS05	14	7
17, 22, 24	74LS06	14	7
18 27	74LS00	14	7
14	M74C14	14	7
9	74LS138	16	8

Fig. 6-31
Z12 CIRCUIT DIAGRAM OF LED BOARD (42W9096)
COMPONENT LIST: Table 7-13

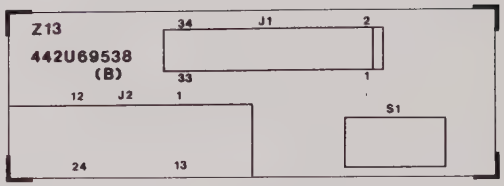


Fig. 6-32 Z13 Connector Board

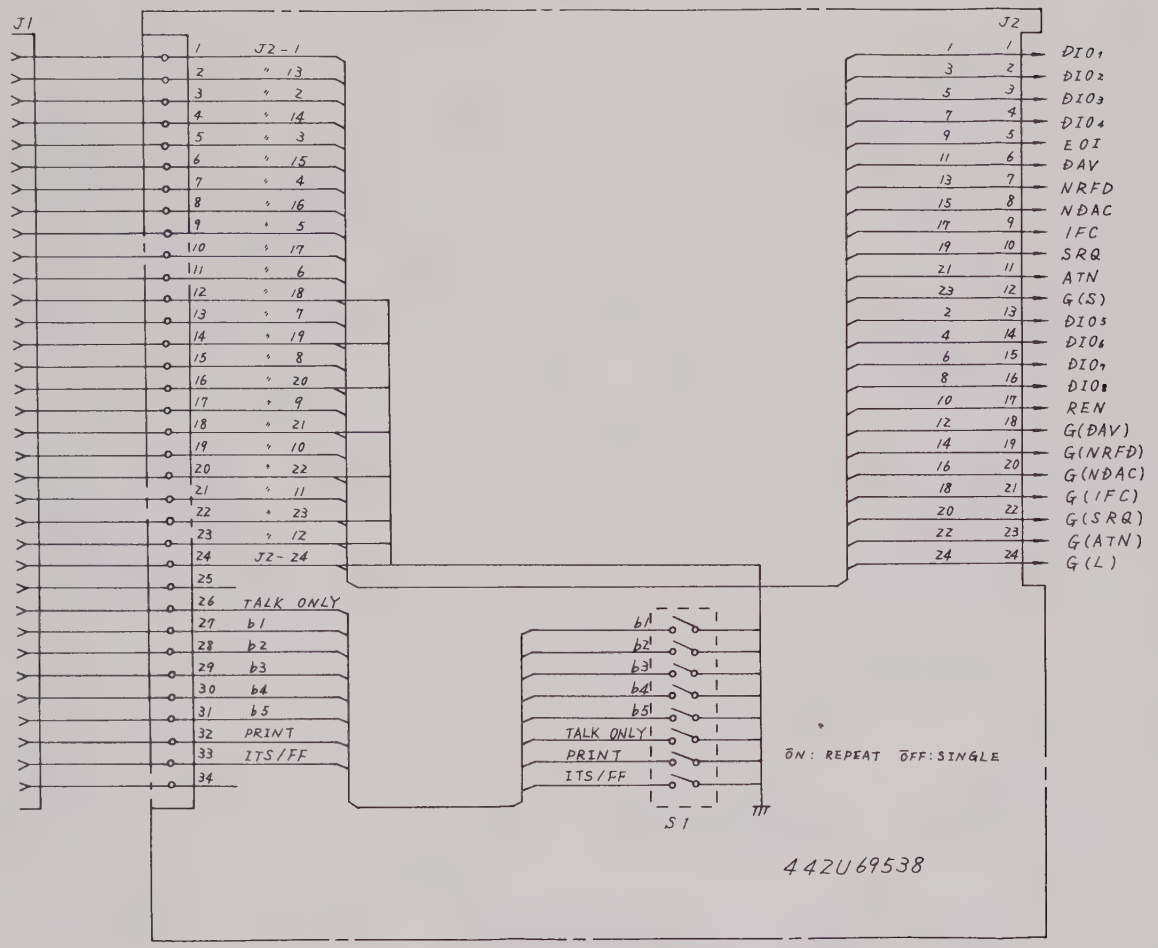


Fig. 6-33
Z13 CIRCUIT DIAGRAM OF CONNECTOR BOARD (43W26251)

COMPONENT LIST: Table 7-14

17

SECTION 7

REPLACEABLE PARTS

7.1 Introduction

This section contains informations relative to ordering replacement components.

The following table shows circuit reference (hereinafter CKT REF) and abbreviations used for components given in the component list (hereinafter C.L.).

In the C.L., the quantity of each component is one so far as no quantitative description is given in the "NOTE" column.

7.2 Ordering Information

Upon ordering components, please give the following descriptions by referring to the COMPONENT LIST.

	Item	Example
(1)	Name of instrument	Video Signal Analyzer MS349D
(2)	Name of component	Component of D/A BOARD
(3)	CKT REF	C8
(4)	Name of component	ECQ-M1H 472KZ Note: Part name is given in parentheses ( ) in the C.L. (Component List). Components with asterisks* are those that require factory adjustment upon repairing. When ordering a component or components with asterisk, give full description of the component.
(5)	Quantity	1
(6)	Serial No. of instrument	M31257

Circuit Reference and Abbreviations Used in Components List

AT: Attenuator	K: Relay	Q: Transistor, Diode, Rectifier, IC	T: Transformer
C: Capacitor	L: Coil	R: Resistor	V: Neon lamp, Vacuumtube
F: Fuse	M: Meter, timer	S: Switch	Z: Unit
J: Jack, plug, connector	P: Lamp		

A	: amperes	J-FET	: junction FET	PNP	: positive-negative-positive
Att,R var	: attenuator variable using film resistive elemetns	k	: kilo ($x10^3$)	p-p,pp	: peak to peak value
BL	: boundary layer	LED	: light emitting diode	RFC	: RF choke
Cer	: ceramic	M	: mega ($x10^6$)	R-lamp	: resistor lamp
CF	: carbon film	m	: milli ($x10^{-3}$)	rms	: effective value (root means square)
Comp	: composition	MF	: metallized film	SBD	: shottky barrier diode
CRT	: cathode-ray tube	MOS-FET	: metal oxide semi-conductor FET	SCR	: sillicon controlled rectifier
Di	: diode	M paper	: metallized paper	Si	: sillicon
DIL type	: dual-in line type	M plast	: metallized plastic film	SRD	: step recovery diode
Elect	: electrolyte aluminum	Multi	: multiplying	Tant	: tantalum
F	: farad	N ch	: N channel	Tr	: transistor
FET	: field effect transistor	non-lin	: non-linear taper	Trans	: transformer
G	: ground	Non-pol	: non-polarity	µ	: micro ($x10^{-6}$)
Ge	: germanium	NPN	: negative-positive-negative	V	: volt
H	: henry	Ω	: ohms	Var	: variable
Hz	: hertz	p	: pico ($x10^{-12}$)	WW	: wire wound
IC	: integrated circuit	Plast	: plastic film	XTAL	: crystal
IEC	: applicable to IEC safety standard	PMTR	: potentiometer		

7.3 Semiconductor Markings

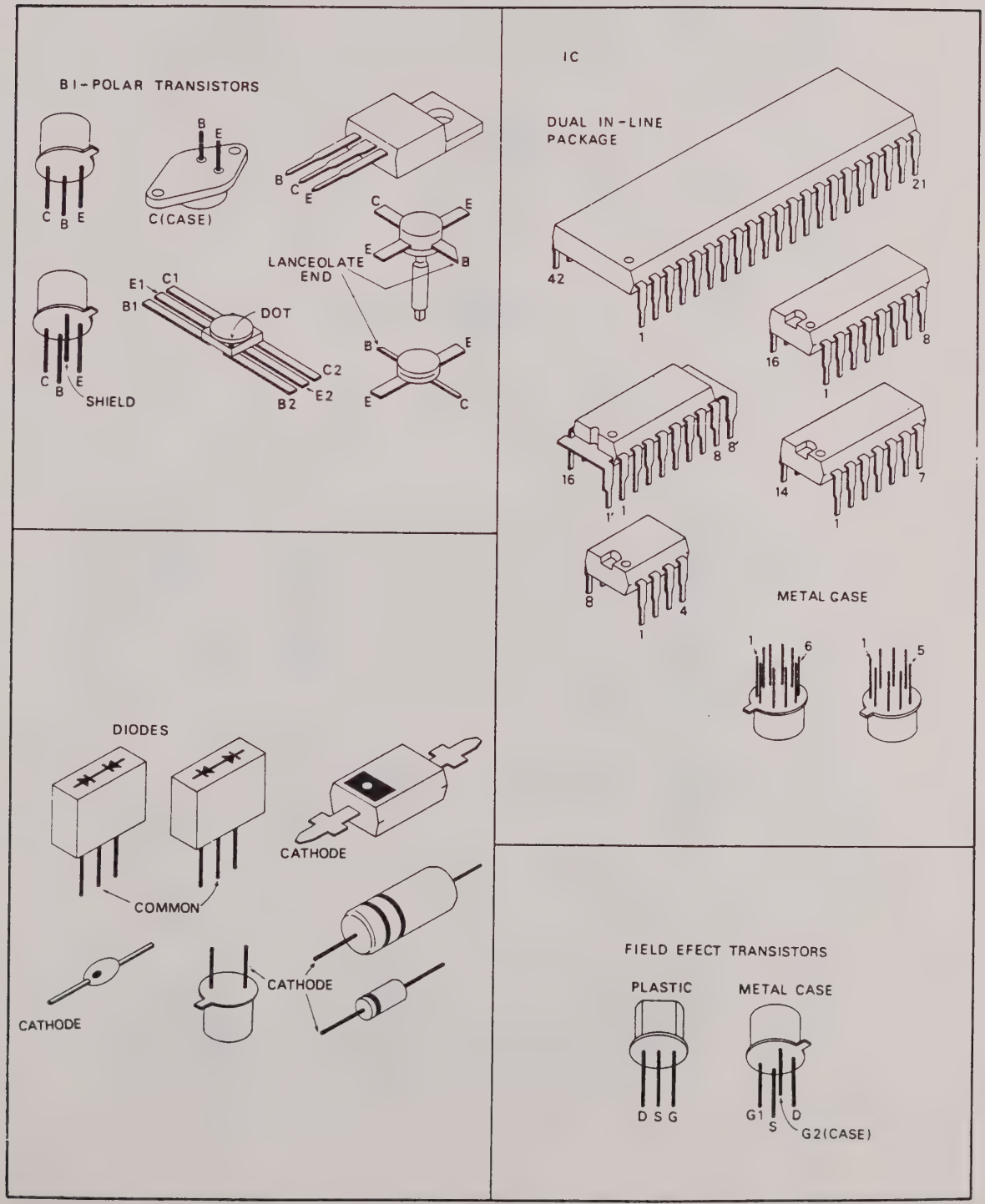
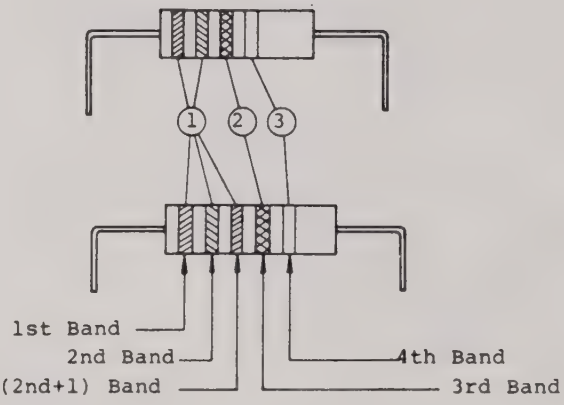


Fig. 7-1 Examples of Semiconductor Marking Methods

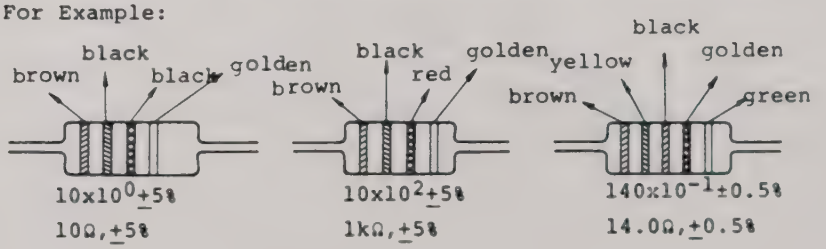
7.4 Method of Capacitors/Resistors

a. Reading resistance

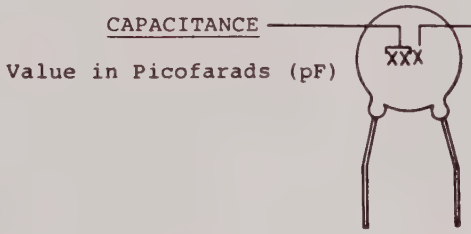


COLOR	① Figure		② Multiplier	③ Tolerance
	1st	2nd	3rd	4th
Black	0	0	$x10^0$	-
Brown	1	1	$x10^1$	-
Red	2	2	$x10^2$	-
Orange	3	3	$x10^3$	-
Yellow	4	4	$x10^4$	-
Green	5	5	$x10^5$	$\pm$0.5%
Blue	6	6	$x10^6$	-
Purple	7	7	$x10^7$	-
Grey	8	8	$x10^8$	-
White	9	9	$x10^9$	-
Gold	-	-	$x10^{-1}$	$\pm$5%
Silver	-	-	$x10^{-2}$	$\pm$10%
-----	-	-		$\pm$20%

For Example:



b. Reading capacitance



Value in Picofarads (pF)

Number of zero's following the value

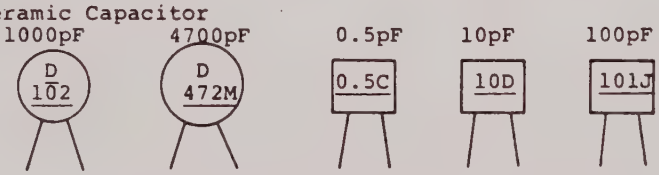
EXAMPLES: 103 = 10,000pF = 10^{-8}F or 0.01μF
302 = 3,000pF = $3x10^{-9}$F or 0.003μF
676 = 67,000,000pF = $67x10^{-6}$F or 67μF

(a) Ceramic capacitor, polyester capacitor

Indication	0.5	1	10	101	102	103	104
Capacity	0.5pF	1pF	10pF	100pF	1000pF	0.01μF	0.1μF

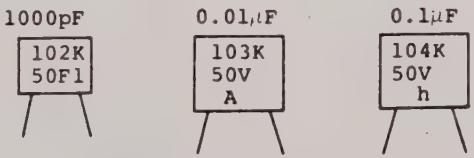
Example:

Ceramic Capacitor



Capacity values are always underlined.

Polyester Capacitor



(b) Tantalum capacitor. Metallized capacitor and Electrolytic capacitor

Indication	OR47	010	100	101
Capacity	0.47μF	1μF	10μF	100μF

7.5 Component Lists

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Table 7-1 CL OF VIDEO SIGNAL ANALYZER OVERALL CIRCUIT (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
F 1	Fuse,(MF51NN250V3.15A AC05)	3.15A		AC100~127V
	Fuse,(MF51NN250V2AAC05)	2A		AC200~254V
F 2	Fuse,(MF51NN250V3.15A AC05)	3.15A		AC100~127V
	Fuse,(MF51NN250V2AAC05)	2A		AC200~254V
G 1	Scale fan,(109S005)			
J 1	Connector,(DF1-20S-2.5R24)			
J 2	Not assigned			
J 3	Not assigned			
J 4	Not assigned			
J 5	Not assigned			
J 6	Not assigned			
J 7	Not assigned			
J 8	Not assigned			
J 9	Not assigned			
J10	Connector,(DF1-10S-2.5R24)			
J11	Connector,(DF1-20S-2.5R24)			
J12	Connector,(DF1-20S-2.5R24)			
J13	Connector,(DF1-10S-2.5R24)			
J14	Connector,(PI011-05F)			
J15	Connector,(PI011-05F)			
J16	Not assigned			
J17	Not assigned			
J18	Plug,(27DP-LP-1.5)			
J19	Plug,(27DP-LP-1.5)			
J20	Plug,(27DP-LP-1.5)			
J21	Plug,(27DP-LP-1.5)			
J22	Receptacle,(BNC-R-101)			
J23	Receptacle,(BNC-R-101)			
J24	Receptacle,(BNC-R-101)			
J25	Receptacle,(BNC-R-101)			
J26	Receptacle,(BNC-R-101)			
J27	Receptacle,(BNC-R-101)			
J28	Receptacle,(BNC-R-101)			
J29	Not assigned			
J30	Not assigned			
J31	Inlet,(44J66110 PA-125)			

( ): Manufacturer's part number

Table 7-1 CL OF VIDEO SIGNAL ANALYZER OVERALL CIRCUIT (NTSC)

CKT REF	DESCRIPTION	RATING	NOTE
J32	Terminal,(34E772 A-12)		
J33	Power cord,(34J76170)		
J34	Connector,(PI011-05F)		
J35	Connector,(BNC-R-101)		
J36	Connector,(BNC-R-101)		
J37	Connector,(BNC-R-101)		
R 1	Var,CF,(RV16YN10SB 500Ω)	500Ω	
S 1	Pushbutton,(44S69940 ESB-9997S)		
T 1	Power trans,(44T68716)		
V 1	Neon lamp,(34F75361 BNS-3RU-C)		
Z 1	D/A Board		44W69129
Z 2	Control Board (II)		44W69130
Z 3	Control Board (I)		44W69128
Z 4	I/O Board (I)		44W69126
Z 5	I/O Board (II)		44W69127
Z 6	Analog Board (I)		44W69132
Z 7	Analog Board (II)		44W69133
Z 8	50MHz Clock Board		44W69134
Z 9	Power Board		44W69124
Z10	Mother Board		44W69125
Z11	Limit Board		44W69131
Z12	LED Board		44W69123
Z13	Connector Board		44W69245
Z14	Line Filter,(44Z69942 ZMB2203-13)		

( ): Manufacturer's part number

Table 7-2 COMPONENT LIST OF D/A BOARD

CKT REF	DESCRIPTION	RATING		NOTE
C 1	Cer,(CK924C1H104M)	0.1μF,±20%,50V		Q'ty 33, Parallel
C 2	Elect,(CE02C1V470)	47μF,±20%,35V		
C 3	Elect,(CE02C1V470)	47μF,±20%,35V		
C 4	Elect,(CE02C1V470)	47μF,±20%,35V		
C 5	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C 6	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C 7	Cer,(CC924CH1H220D)	22pF,±0.5pF,50V		
C 8	Plast,(ECQ-M1H472KZ)	4700pF,±10%,50V		
C 9	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C10	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C11	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C12	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C13	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C14	Cer,(CK924C1H472M)	4700pF,±20%,50V		
J 1	Connector,(PI021-05M)			
J 2	Connector,(PI021-05M)			
Q 1	IC,(74LS161)			
Q 2	IC,(74LS10)			
Q 3	IC,(74LS00)			
Q 4	IC,(TC40174BP)			
Q 5	IC,(TC40174BP)			
Q 6	IC,(74LS161)			
Q 7	IC,(74LS161)			
Q 8	IC,(74LS161)			
Q 9	Not assigned			
Q10	IC,(74LS74A)			
Q11	IC,(74LS161)			
Q12	IC,(74LS161)			
Q13	IC,(74LS04)			
Q14	IC,(TC40174BP)			
Q15	IC,(TC40174BP)			
Q16	IC,(74LS161)			
Q17	IC,(74LS161)			
Q18	IC,(74LS30)			
Q19	Not assigned			
Q20	Not assigned			
Q21	IC,(74LS161)			
Q22	IC,(74154)			
Q23	IC,(74LS112)			
Q24	IC,(74LS174)			
Q25	IC,(TC40174BP)			
Q26	IC,(74LS161)			
Q27	IC,(74LS174)			
Q28	IC,(74LS174)			
Q29	Not assigned			

( ): Manufacturer's part number

Table 7-2 COMPONENT LIST OF D/A BOARD

CKT REF	DESCRIPTION	RATING	NOTE
Q30	Not assigned		
Q31	IC,(74LS161)		
Q32	IC,(74LS151)		
Q33	IC,(74LS112)		
Q34	IC,(74LS174)		
Q35	IC,(74LS138)		
Q36	IC,(74LS161)		
Q37	IC,(μPC258C)		
Q38	IC,(AD565AJD)		
Q39	Not assigned		
Q40	Not assigned		
Q41	IC,(74LS161)		
Q42	IC,(74LS151)		
Q43	IC,(74LS112)		
Q44	IC,(74LS10)		
Q45	IC,(74LS04)		
Q46	IC,(74LS00)		
Q47	Not assigned		
Q48	Not assigned		
Q49	Not assigned		
Q50	Not assigned		
Q51	IC,(74LS00)		
Q52	IC,(74LS161)		
Q53	IC,(74LS04)		
Q54	IC,(74LS112)		
Q55	IC,(74LS153)		
Q56	IC,(74LS112)		
Q57	Not assigned		
Q58	Not assigned		
Q59	Not assigned		
Q60	Not assigned		
Q61	Not assigned		
Q62	IC,(74LS161)		
Q63	IC,(74LS08)		
Q64	IC,(74LS112)		
Q65	IC,(74LS161)		
Q66	IC,(74LS08)		
Q67	Tr,(2SC2718)		
Q68	Tr,(2SC2718)		
Q69	Tr,(2SC2718)		
Q70	Not assigned		
Q71	Not assigned		
Q72	IC,(74LS04)		
Q73	IC,(74LS00)		
Q74	IC,(74LS00)		
Q75	IC,(74LS32)		
Q76	IC,(AD561JD)		

( ): Manufacturer's part number

Table 7-2 COMPONENT LIST OF D/A BOARD

CKT REF	DESCRIPTION	RATING		NOTE
Q77	IC,(μPC159A)			
R 1	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R 2	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R 3	Var,MF,(RJ-6P 2kΩ)	2kΩ,1/2W		
R 4	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R 5	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R 6	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 7	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 8	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R 9	Var,MF,(RJ-6P 10kΩ)	10kΩ,1/2W		
R10	Var,MF,(RJ-6P 5kΩ)	5kΩ,1/2W		
R11	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R12	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R13	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R14	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R15	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R16	CF,(ARD25T181J)	180Ω,±5%,1/4W		
R17	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R18	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R19	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R20	CF,(ARD25T123J)	12kΩ,±5%,1/4W		
R21	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R22	CF,(ARD25T100J)	10Ω,±5%,1/4W		
R23	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R24	Var,MF,(RJ-6P 10kΩ)	10kΩ,1/2W		
R25	CF,(ARD25T181J)	180Ω,±5%,1/4W		
R26	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R27	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R28	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R29	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R30	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R31	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-3 COMPONENT LIST OF CONTROL BOARD (II)

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Cer,(CK924C1H104M)	0.1μF,±20%,50V	Q'ty 35, Parallel
C 2	Elect,(CE02C1V470)	47μF,±20%,35V	
C 3	Cer,(CC924CH1H151J)	150pF,±5%,50V	
C 4	Cer,(CC924CH1H151J)	150pF,±5%,50V	
J 1	Connector,(HIF3-34P-2.54DS)		
J 2	Connector,(HIF3-34P-2.54DS)		
Q 1	Not assigned		
Q 2	IC,(HM6116P-3)		
Q 3	IC,(HM6116P-3)		
Q 4	IC,(74LS245)		
Q 5	IC,(74LS174)		
Q 6	IC,(74LS157)		
Q 7	IC,(74LS04)		
Q 8	Not assigned		
Q 9	Not assigned		
Q10	Not assigned		
Q11	Not assigned		
Q12	IC,(HM6116P-3)		
Q13	IC,(HM6116P-3)		
Q14	IC,(74LS374)		
Q15	IC,(74LS174)		
Q16	IC,(74LS157)		
Q17	IC,(74LS20)		
Q18	Not assigned		
Q19	Not assigned		
Q20	Not assigned		
Q21	Not assigned		
Q22	IC,(HM6116P-3)		
Q23	IC,(HM6116P-3)		
Q24	IC,(74LS374)		
Q25	IC,(74LS00)		
Q26	IC,(74LS157)		
Q27	Not assigned		
Q28	Not assigned		
Q29	Not assigned		
Q30	Not assigned		
Q31	Not assigned		
Q32	IC,(HM6116P-3)		
Q33	IC,(HM6116P-3)		
Q34	IC,(74LS240)		
Q35	IC,(74LS04)		

( ): Manufacturer's part number

Table 7-3 COMPONENT LIST OF CONTROL BOARD (II)

CKT REF	DESCRIPTION	RATING	NOTE
Q36	IC,(74LS157)		
Q37	Not assigned		
Q38	Not assigned		
Q39	Not assigned		
Q40	Not assigned		
Q41	Not assigned		
Q42	IC,(SN75161)		
Q43	IC,(SN75160)		
Q44	IC,(8291A)		
Q45	Not assigned		
Q46	IC,(74LS138)		
R 1	Single in line array (IHR-8-622JA)	6.2kΩ x 8,1/8W	
R 2	CF,(ARD25T102J)	1kΩ,±5%,1/4W	

( ): Manufacturer's part number

Table 7-4 COMPONENT LIST OF CONTROL BOARD (I)

CKT REF	DESCRIPTION	RATING		NOTE
C 1	Cer,(CK924C1H104M)	0.1μF,±20%,50V		Q'ty 32
C 2	Elect,(CE02C1V470)	47μF,±20%,35V		
C 3	Cer,(CC924CH1H470J)	47pF,±5%,50V		
C 4	Cer,(CC924CH1H470J)	47pF,±5%,50V		
C 5	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C 6	Cer,(CC92CH1E470J)	47pF,±5%,50V		
C 7	Not assigned			
C 8	Elect,(CE02W1A470)	47μF,±20%,10V		
C 9	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C10	Tant,(CS02H1V6R8M)	6.8μF,±20%,35V		
C11	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
J 1	Connector,(HIF3-26P-2.54DS)			
J 2	Connector,(HIF23A-20D-AA50S)			
J 3	Connector,(HIF23A-34D-BA30S)			
Q 1	Not assigned			
Q 2	IC,(7400)			
Q 3	IC,(74LS293)			
Q 4	IC,(74LS32)			
Q 5	IC,(74LS245)			
Q 6	IC,(74LS32)			
Q 7	IC,(74LS32)			
Q 8	IC,(74LS32)			
Q 9	IC,(74LS74A)			
Q10	IC,(74LS74A)			
Q11	IC,(μPD780C-1)			
Q12	Not assigned			
Q13	IC,(74S04)			
Q14	Tr,(2SA711)			
Q15	IC,(74LS245)			
Q16	IC,(74LS32)			
Q17	IC,(74LS74A)			
Q18	IC,(74LS32)			
Q19	IC,(74LS74A)			
Q20	IC,(74LS32)			
Q21	IC,(74LS244)			
Q22	IC,(74LS244)			
Q23	Not assigned			
Q24	Not assigned			
Q25	IC,(74LS138)			
Q26	IC,(74LS32)			

( ): Manufacturer's part number

Table 7-4 COMPONENT LIST OF CONTROL BOARD (I)

CKT REF	DESCRIPTION	RATING		NOTE
Q27	IC,(74LS32)			
Q28	IC,(74LS32)			
Q29	IC,(74LS74A)			
Q30	IC,(74LS21)			
Q31	IC,(HN482764G-4)			
Q32	IC,(HN482764G-4)			
Q33	Not assigned			
Q34	IC,(HM6116P-3)			
Q35	IC,(74LS138)			
Q36	IC,(74154)			
Q37	Di,(1S953)			
Q38	IC,(74154)			
Q39	IC,(74154)			
Q40	IC,(74LS32)			
Q41	IC,(HN482764G-4)			
Q42	IC,(HN482764G-4)			
Q43	Not assigned			
Q44	IC,(HM6116P-3)			
Q45	IC,(74LS04)			
Q46	IC,(74LS32)			
Q47	IC,(74LS244)			
Q48	IC,(74LS367A)			
Q49	IC,(74LS32)			
Q50	IC,(74LS32)			
Q51	IC,(HN482764G-4)			
Q52	IC,(HN482764G-4)			
Q53	Not assigned			
Q54	IC,(HM6116P-3)			
Q55	IC,(μPD8253C-5)			
Q56	IC,(74LS10)			
Q57	IC,(74LS32)			
Q58	IC,(74LS00)			
Q59	IC,(74LS08)			
Q60	IC,(74LS32)			
Q61	IC,(74LS244)			
Q62	IC,(74LS21)			
Q63	Not assigned			
Q64	IC,(HM6116P-3)			
Q65	IC,(μPD8259C-5)			
Q66	Not assigned			
Q67	IC,(74LS245)			
Q68	Not assigned			
Q69	IC,(74LS245)			
Q70	IC,(74LS74A)			
Q71	IC,(74LS155)			
Q72	IC,(74LS244)			
Q73	Not assigned			

( ): Manufacturer's part number

Table 7-4 COMPONENT LIST OF CONTROL BOARD (I)

CKT REF	DESCRIPTION	RATING		NOTE
Q74	IC,(74154)			
Q75	IC,(74LS08)			
Q76	IC,(74LS32)			
Q77	IC,(74LS244)			
Q78	Not assigned			
Q79	Not assigned			
Q80	IC,(74LS32)			
R 1	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R 2	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 3	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R 4	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R 5	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R 6	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 7	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R 8	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R 9	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R10	CF,(ARD25T220J)	22Ω,±5%,1/4W		
X 1	XTAL OSC,(NSX-553-NC-18C)	13990.6KHz		

( ): Manufacturer's part number

Table 7-5 COMPONENT LIST OF I/O BOARD (I)

CKT REF	DESCRIPTION	RATING		NOTE
C 1	Cer,(CK924C1H104M)	0.1μF,±20%,50V		Q'ty 32, Parallel
C 2	Elect,(CE02C1V470)	47μF,±20%,35V		
C 3	Cer,(CC924CH1H100D)	10pF,±0.5pF,50V		
C 4	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C 5	Not assigned			
C 6	Cer,(CC924CH1H200J)	20pF,±5%,50V		
C 7	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C 8	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C 9	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C10	Cer,(CC924CH1H220J)	22pF,±5%,50V		
Q 1	IC,(74LS283)			
Q 2	IC,(74LS123)			
Q 3	IC,(74LS04)			
Q 4	IC,(74LS04)			
Q 5	IC,(74LS08)			
Q 6	IC,(74LS10)			
Q 7	IC,(74LS04)			
Q 8	IC,(74LS30)			
Q 9	IC,(74LS157)			
Q10	IC,(74LS157)			
Q11	IC,(74LS283)			
Q12	IC,(74LS283)			
Q13	IC,(74LS283)			
Q14	IC,(74LS283)			
Q15	IC,(74LS00)			
Q16	IC,(74LS174)			
Q17	IC,(74LS161)			
Q18	IC,(74LS161)			
Q19	IC,(74LS161)			
Q20	IC,(74LS161)			
Q21	IC,(74LS174)			
Q22	IC,(74LS174)			
Q23	IC,(74LS174)			
Q24	IC,(74LS174)			
Q25	IC,(74LS174)			
Q26	IC,(74LS174)			
Q27	IC,(74LS157)			
Q28	IC,(74LS157)			
Q29	IC,(74LS157)			
Q30	IC,(74LS157)			
Q31	IC,(74LS244)			
Q32	IC,(74LS244)			
Q33	Not assigned			
Q34	IC,(74LS244)			
Q35	IC,(74LS283)			

( ): Manufacturer's part number

Table 7-5 COMPONENT LIST OF I/O BOARD (I)

CKT REF	DESCRIPTION	RATING		NOTE
Q36	IC,(74LS157)			
Q37	IC,(74LS193)			
Q38	IC,(74LS193)			
Q39	IC,(74LS193)			
Q40	IC,(74LS193)			
Q41	IC,(HM6116P-4)			
Q42	IC,(HM6116P-4)			
Q43	Not assigned			
Q44	IC,(HM6116P-4)			
Q45	IC,(74LS157)			
Q46	IC,(74LS157)			
Q47	IC,(TC40174BP)			
Q48	IC,(TC40174BP)			
Q49	IC,(TC40174BP)			
Q50	IC,(TC40174BP)			
Q51	IC,(HM6116P-4)			
Q52	IC,(HM6116P-4)			
Q53	Not assigned			
Q54	IC,(74LS245)			
Q55	IC,(74LS157)			
Q56	IC,(TC40174BP)			
Q57	IC,(TC40174BP)			
Q58	IC,(74LS244)			
Q59	Not assigned			
Q60	IC,(HM6116P-4)			
Q61	IC,(HM6116P-4)			
Q62	IC,(HM6116P-4)			
Q63	Not assigned			
Q64	IC,(74LS245)			
Q65	IC,(74LS244)			
Q66	IC,(74LS08)			
Q67	IC,(74LS123)			
Q68	IC,(74LS123)			
Q69	Not assigned			
Q70	Not assigned			
Q71	IC,(HM6116P-4)			
Q72	IC,(HM6116P-4)			
Q73	Not assigned			
Q74	IC,(74LS245)			
Q75	IC,(74LS139)			
Q76	IC,(74LS00)			
R 1	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R 2	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 3	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 4	CF,(ARD25T103J)	10kΩ,±5%,1/4W		

Table 7-5 COMPONENT LIST OF I/O BOARD (I)

CKT REF	DESCRIPTION	RATING		NOTE
R 5	CF,(ARD25T223J)	22kΩ,±5%,1/4W		
R 6	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R 7	CF,(ARD25T221J)	220Ω,±5%,1/4W		

( ): Manufacturer's part number

Table 7-6 COMPONENT LIST OF I/O BOARD (II)

CKT REF	DESCRIPTION	RATING		NOTE
C 1	Cer,(CK924C1H104M)	0.1μF,±20%,50V		Q'ty 32, Parallel
C 2	Elect,(CE02C1V470)	47μF,±20%,35V		
C 3	Plast,(ECQ-M1H472KZ)	4700pF,±10%,50V		
C 4	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C 5	Plast,(ECQ-M1H223KZ)	0.022μF,±10%,50V		
C 6	Plast,(ECQ-M1H222KZ)	2200pF,±10%,50V		
C 7	Cer,(CC924CH1H470J)	47pF,±5%,50V		
C 8	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C 9	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C10	Not assigned			
C11	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C12	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C13	Cer,(CC924CH1H101J)	100pF,±5%,50V		
C14	Not assigned			
C15	Not assigned			
C16	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C17	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C18	Elect,(CE02C1C101)	100μF,±20%,16V		
C19	Cer,(CC924CH1H101J)	100pF,±5%,50V		
C20	Cer,(CC924CH1H101J)	100pF,±5%,50V		
C21	Elect,(CE02C1C101)	100μF,±20%,16V		
C22	Elect,(CE02C1C101)	100μF,±20%,16V		
C23	Elect,(CE02C1C101)	100μF,±20%,16V		
C24	Not assigned			
C25	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C26	Elect,(CE02C1A220)	22μF,±20%,10V		
C27	Cer,(CC924CH1H101J)	100pF,±5%,50V		
C28	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C29	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C30	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C31	Cer,(CC924CH1H220J)	22pF,±5%,50V		
C32	Cer,(CC924CH1H101J)	100pF,±5%,50V		
C33	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C34	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C35	Plast,(ECQ-M1H223KZ)	0.022μF,±10%,50V		
C36	Cer,(CC924CH1H101J)	100pF,±5%,50V		
C37	Plast,(ECQ-M1H473KZ)	0.047μF,±10%,50V		
C38	Plast,(ECQ-M1H223KZ)	0.022μF,±10%,50V		
C39	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C40	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C41	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
J 1	Connector,(HIF23A-34D-AA70S)			
J 2	Not assigned			
J 3	Plug,(27DP-LP-1.5)			
J 4	Not assigned			
J 5	Not assigned			

( ): Manufacturer's part number

Table 7-6 COMPONENT LIST OF I/O BOARD (II)

CKT REF	DESCRIPTION	RATING		NOTE
J 6	Connector,(DF1-10P-2.5DSA)			
L 1	Coil,(LF8-220K)	22μH		
Q 1	IC,(74LS04)			
Q 2	IC,(74LS175)			
Q 3	IC,(74LS175)			
Q 4	IC,(74LS244)			
Q 5	Not assigned			
Q 6	IC,(74LS157)			
Q 7	IC,(74LS04)			
Q 8	IC,(74LS30)			
Q 9	IC,(74LS30)			
Q10	IC,(74LS30)			
Q11	IC,(HM6147HP)			
Q12	IC,(74LS08)			
Q13	IC,(74LS20)			
Q14	IC,(74LS08)			
Q15	IC,(74LS00)			
Q16	IC,(74LS112)			
Q17	IC,(74LS30)			
Q18	IC,(74LS00)			
Q19	IC,(74LS30)			
Q20	IC,(74LS20)			
Q21	IC,(74LS157)			
Q22	IC,(74LS193)			
Q23	IC,(74LS193)			
Q24	IC,(74LS112)			
Q25	IC,(74LS04)			
Q26	IC,(74LS74A)			
Q27	IC,(74LS04)			
Q28	IC,(74LS279)			
Q29	IC,(74LS279)			
Q30	IC,(74LS20)			
Q31	IC,(74LS175)			
Q32	IC,(74LS175)			
Q33	IC,(74LS175)			
Q34	IC,(74LS08)			
Q35	IC,(74LS161)			
Q36	IC,(74LS161)			
Q37	IC,(74LS05)			
Q38	IC,(74LS123)			
Q39	IC,(74121)			

( ): Manufacturer's part number

Table 7-6 COMPONENT LIST OF I/O BOARD (II)

CKT REF	DESCRIPTION	RATING		NOTE
Q40	IC,(74LS123)			
Q41	IC,(74LS193)			
Q42	IC,(74LS193)			
Q43	IC,(74LS193)			
Q44	IC,(74LS157)			
Q45	IC,(74LS08)			
Q46	IC,(74LS161)			
Q47	IC,(74LS00)			
Q48	IC,(74LS279)			
Q49	IC,(74LS123)			
Q50	IC,(74LS74A)			
Q51	IC,(HM6147HP)			
Q52	IC,(74LS74A)			
Q53	IC,(74LS175)			
Q54	IC,(74LS175)			
Q55	IC,(74LS10)			
Q56	IC,(74LS74A)			
Q57	IC,(74LS32)			
Q58	IC,(74LS08)			
Q59	IC,(74LS123)			
Q60	IC,(74LS08)			
Q61	IC,(74LS175)			
Q62	IC,(74LS175)			
Q63	IC,(74LS175)			
Q64	IC,(74LS175)			
Q65	IC,(74LS175)			
Q66	IC,(74LS175)			
Q67	IC,(μPC624D)			
Q68	IC,(74LS00)			
Q69	IC,(74LS00)			
Q70	IC,(74LS00)			
Q71	IC,(74LS32)			
Q72	IC,(74LS74A)			
Q73	IC,(74LS123)			
Q74	IC,(74LS157)			
Q75	IC,(74LS175)			
Q76	IC,(74LS175)			
Q77	IC,(μPC258C)			
Q78	Tr,(2SC97A)			
Q79	Tr,(2SC943)			
Q80	Tr,(2SC943)			
Q81	Tr,(2SC943)			
Q82	Di,breakdown,(RD5.1E)	4.8 to 5.37V,400mW		
Q83	Di,breakdown,(RD5.1E)	4.8 to 5.37V,400mW		
Q84	Di,(1S953)			

( ): Manufacturer's part number

Table 7-6 COMPONENT LIST OF I/O BOARD (II)

CKT REF	DESCRIPTION	RATING	NOTE
R 1	CF,(ARD25T153J)	15kΩ,±5%,1/4W	
R 2	CF,(ARD25T101J)	100Ω,±5%,1/4W	
R 3	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R 4	CF,(ARD25T681J)	680Ω,±5%,1/4W	
R 5	CF,(ARD25T * J)	33kΩ to 1MΩ,±5%,1/4W	Q'ty 1 to 3 *, Parallel
R 6	CF,(ARD25T333J)	33kΩ,±5%,1/4W	
R 7	CF,(ARD25T221J)	220Ω,±5%,1/4W	
R 8	CF,(ARD25T * J)	33kΩ to 1MΩ,±5%,1/4W	Q'ty 1 to 3 *, Parallel
R 9	Not assigned		
R10	CF,(ARD25T221J)	220Ω,±5%,1/4W	
R11	CF,(ARD25T221J)	220Ω,±5%,1/4W	
R12	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R13	Not assigned		
R14	Not assigned		
R15	CF,(ARD25T471J)	470Ω,±5%,1/4W	
R16	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W	
R17	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W	
R18	CF,(ARD25T512J)	5.1kΩ,±5%,1/4W	
R19	CF,(ARD25T512J)	5.1kΩ,±5%,1/4W	
R20	CF,(ARD25T105J)	1MΩ,±5%,1/4W	
R21	Var,MF,(RJ-6S 5kΩ)	5kΩ,1/2W	
R22	Var,MF,(RJ-6S 50kΩ)	50kΩ,1/2W	
R23	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W	
R24	CF,(ARD25T473J)	47kΩ,±5%,1/4W	
R25	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R26	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W	
R27	CF,(ARD25T473J)	47kΩ,±5%,1/4W	
R28	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R29	CF,(ARD25T392J)	3.9kΩ,±5%,1/4W	
R30	CF,(ARD25T182J)	1.8kΩ,±5%,1/4W	
R31	Var,MF,(RJ-6S 5kΩ)	5kΩ,1/2W	
R32	Var,MF,(RJ-6S 5kΩ)	5kΩ,1/2W	
R33	MF,(RN14K2H271J)	270Ω,±5%,1/4W	
R34	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R35	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R36	MF,(RN14K2H681J)	680Ω,±5%,1/4W	
R37	Not assigned		
R38	CF,(ARD25T683J)	68kΩ,±5%,1/4W	
R39	CF,(ARD25T221J)	220Ω,±5%,1/4W	
R40	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W	
R41	CF,(ARD25T183J)	18kΩ,±5%,1/4W	
R42	CF,(ARD25T750J)	75Ω,±5%,1/4W	
R43	Var,MF,(RJ-6P 50kΩ)	50kΩ,1/2W	
R44	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R45	CF,(ARD25T * J)	33kΩ to 1MΩ,±5%,1/4W	Q'ty 1 to 3 *, Parallel

( ): Manufacturer's part number

Table 7-6 COMPONENT LIST OF I/O BOARD (II)

CKT REF	DESCRIPTION	RATING		NOTE
R46	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R47	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R48	CF,(ARD25T683J)	68kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Not assigned		
C 2	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C 3	Elect,(CE04C1J2R2)	2.2μF,±20%,63V	
C 4	Elect,(CE04C1J100)	10μF,±20%,63V	
C 5	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C 6	Elect,(CE04C1J100)	10μF,±20%,63V	
C 7	Cer,(CC924CH1H150J)	15pF,±5%,50V	
C 8	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C 9	Not assigned		
C10	Cer,(RPE111CH301G50)	300pF,±2%,50V	
C11	Cer,(CC924CH1H471J)	470pF,±5%,50V	
C12	Cer,(CC924CH1H220J)	22pF,±5%,50V	
C13	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C14	Cer,(CC924CH1H470J)	47pF,±5%,50V	
C15	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C16	Cer,(CC924CH1H471J)	470pF,±5%,50V	
C17	Cer,(CC924CH1H680J)	68pF,±5%,50V	
C18	Plast,(ECQ-P1 392FZ)	3900pF,±1%,100V	
C19	Cer,(CC924CH1H331J)	330pF,±5%,50V	
C20	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C21	Cer,(CC924CH1H330J)	33pF,±5%,50V	
C22	Cer,(CC924CH1H331J)	330pF,±5%,50V	
C23	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C24	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C25	Cer,(CC924CH1H470J)	47pF,±5%,50V	
C26	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V	
C27	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V	
C28	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V	
C29	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V	
C30	Plast,(ECQ-P1 153FZ)	0.015μF,±1%,100V	
C31	Cer,(CC924CH1H471J)	470pF,±5%,50V	
C32	Cer,(RPE111CH200G50)	20pF,±2%,50V	
C33	Plast,(ECQ-P1 153FZ)	0.015μF,±1%,100V	
C34	Cer,(CC924CH1H471J)	470pF,±5%,50V	
C35	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V	
C36	Cer,(CC924CK1H020C)	2pF,±0.25pF,50V	Q'ty 0 or 1, * Parallel
	Cer,(CC924CJ1H030C)	3pF,±0.25pF,50V	
	Cer,(CC924CH1H * D)	4 to 5pF,±0.5pF,50V	
C37	Cer,(CC924CJ1H030C)	3pF,±0.25pF,50V	
C38	Elect,(CE02C1J100)	10μF,±20%,63V	
C39	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C40	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V	
C41	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C42	Not assigned		
C43	Not assigned		
C44	Elect,(CE04C1J4R7)	4.7μF,±20%,63V	
C45	Cer,(CK924C1H104M)	0.1μF,±20%,50V	

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
C46	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C47	Cer,(RPE111CH431G50)	430pF,±2%,50V		
C48	Cer,(CC924CH1H101J)	100pF,±5%,50V		
C49	Cer,(RPE111CH561G50)	560pF,±2%,50V		
C50	Cer,(CC924CH1H330J)	33pF,±5%,50V		
C51	Cer,(RPE111CH511G50)	510pF,±2%,50V		
C52	Cer,(RPE111CH391G50)	390pF,±2%,50V		
C53	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C54	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C55	Cer,(CC924CH1H390J)	39pF,±5%,50V		
C56	Plast,(ECQ-P1 912FZ)	9100pF,±1%,100V		
C57	Plast,(ECQ-P1 134FZ)	0.13μF,±1%,100V		
C58	Plast,(ECQ-P1 163FZ)	0.016μF,±1%,100V		
C59	Plast,(ECQ-P1 184FZ)	0.18μF,±1%,100V		
C60	Plast,(ECQ-P1 334FZ)	0.33μF,±1%,100V		
C61	Plast,(ECQ-P1 512FZ)	5100pF,±1%,100V		
C62	Plast,(ECQ-P1 753FZ)	0.075μF,±1%,100V		
C63	Plast,(ECQ-P1 622FZ)	6200pF,±1%,100V		
C64	Not assigned			
C65	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C66	Plast,(ECQ-P1 302FZ)	3000pF,±1%,100V		
C67	Cer,(RPE111CH271G50)	270pF,±2%,50V		
C68	Elect,(CE04C1J100)	10μF,±20%,63V		
C69	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C70	Not assigned			
C71	Plast,(ECQ-P1 822FZ)	8200pF,±1%,100V		
C72	Plast,(ECQ-P1 752FZ)	7500pF,±1%,100V		
C73	Plast,(ECQ-P1 203FZ)	0.02μF,±1%,100V		
C74	Plast,(ECQ-P1 302FZ)	3000pF,±1%,100V		
C75	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C76	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C77	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C78	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C79	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C80	Elect,(CE04C1E101)	100μF,±20%,25V		
C81	Elect,(CE04C1E101)	100μF,±20%,25V		
C82	Not assigned			
C83	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C84	Cer,(CC924CH1H101J)	100pF,±5%,50V		
C85	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C86	Cer,(CC924CH1H470J)	47pF,±5%,50V		
C87	Cer,(CC924CH1H * J)	15 to 150pF,±5%,50V		Q'ty 0 to 3, *
C88	Elect,(CE04C1J2R2)	2.2μF,±20%,63V		
C89	Elect,(CE04C1J2R2)	2.2μF,±20%,63V		
C90	Cer,(RPE111CH391G50)	390pF,±2%,50V		

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
C 91	Cer,(CC924CH1H100D)	10pF,±0.5pF,50V		
C 92	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C 93	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C 94	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C 95	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C 96	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C 97	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C 98	Cer,(RPE111CH561G50)	560pF,±2%,50V		
C 99	Cer,(RPE111CH821G50)	820pF,±2%,50V		
C100	Cer,(RPE111CH561G50)	560pF,±2%,50V		
C101	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C102	Elect,(CE04C1J100)	10μF,±20%,63V		
C103	Elect,(CE04C1J100)	10μF,±20%,63V		
C104	Not assigned			
C105	Cer,(CC924CH1H330J)	33pF,±5%,50V		
C106	Cer,(CC924CH1H560J)	56pF,±5%,50V		
C107	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C108	Cer,(CC924CH1H120J)	12pF,±5%,50V		
C109	Cer,(CC924CH1H620J)	62pF,±5%,50V		
C110	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C111	Cer,(CC924CH1H300J)	30pF,±5%,50V		
C112	Cer,(CC924CH1H510J)	51pF,±5%,50V		
C113	Elect,(CE04C1J100)	10μF,±20%,63V		
C114	Elect,(CE04C1J100)	10μF,±20%,63V		
C115	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C116	Cer,(CC924CK1H020C)	2pF,±0.25pF,50V		
C117	Elect,(CE04C1A101)	100μF,±20%,10V		
C118	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C119	Elect,(CE04C1J100)	10μF,±20%,63V		
C120	Elect,(CE04C1E220)	22μF,±20%,25V		
C121	Elect,(CE04C1A471)	470μF,±20%,10V		
C122	Elect,(CE04C1A471)	470μF,±20%,10V		
C123	Elect,(CE04C1A101)	100μF,±20%,10V		
C124	Cer,(RPE111CH181G50)	180pF,±2%,50V		
C125	Cer,(RPE111CH301G50)	300pF,±2%,50V		
C126	Cer,(CC924CH1H820J)	82pF,±5%,50V		
C127	Cer,(CC924CH1H620J)	62pF,±5%,50V		
C128	Cer,(CC924CH1H331J)	330pF,±5%,50V		
C129	Plast,(ECQ-P1 242FZ)	2400pF,±1%,100V		
C130	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C131	Cer,(RPE111CH271G50)	270pF,±2%,50V		
C132	Cer,(CC924CH1H101J)	100pF,±5%,50V		
C133	Cer,(CC924CK1H020C)	2pF,±0.25pF,50V		Q'ty 0 or 1, *
	Cer,(CC924CJ1H030C)	3pF,±0.25pF,50V		
	Cer,(CC924CH1H * D)	4 to 10pF,±0.5pF, 50V		

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
C134	Not assigned			
C135	Not assigned			
C136	Not assigned			
C137	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C138	Elect,(CE04C1E220)	22μF,±20%,25V		
C139	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C140	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C141	Elect,(CE04C1A331)	330μF,±20%,10V		
C142	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C143	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C144	Elect,(CE04C1J220)	22μF,±20%,63V		
C145	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C146	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C147	Elect,(CE04C1J4R7)	4.7μF,±20%,63V		
C148	Elect,(CE04C1J100)	10μF,±20%,63V		
C149	Not assigned			
C150	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C151	Plast,(ECQ-P1 622FZ)	6200pF,±1%,100V		
C152	Plast,(ECQ-P1 202FZ)	2000pF,±1%,100V		
C153	Plast,(ECQ-P1 332FZ)	3300pF,±1%,100V		
C154	Plast,(ECQ-P1 362FZ)	3600pF,±1%,100V		
C155	Plast,(ECQ-P1 272FZ)	2700pF,±1%,100V		
C156	Plast,(ECQ-P1 472FZ)	4700pF,±1%,100V		
C157	Elect,(CE04C1A470)	47μF,±20%,10V		
C158	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C159	Elect,(CE04C1A470)	47μF,±20%,10V		
C160	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C161	Elect,(CE04C1A470)	47μF,±20%,10V		
C162	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C163	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C164	Not assigned			
C165	Not assigned			
C166	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C167	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C168	Elect,(CE04C1E101)	100μF,±20%,25V		
C169	Elect,(CE04C1E101)	100μF,±20%,25V		
C170	Elect,(CE04C1E101)	100μF,±20%,25V		
C171	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C172	Elect,(CE04C1J4R7)	4.7μF,±20%,63V		
C173	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C174	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C175	Cer,(CC924CK1H020C) Cer,(CC924CJ1H030C) Cer,(CC924CH1H * D)	2pF,±0.25pF,50V 3pF,±0.25pF,50V 4 to 10pF,±0.25pF,50V		Q'ty 0 or 1, *
C176	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C177 to C181	Not assigned			

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
C182	Cer,(CC924CH1H221J)	220pF,±5%,50V		Parallel
	Cer,(CC924CH1H471J)	470pF,±5%,50V		Parallel
C183	Cer,(CC924CK1H020C)	2pF,±0.25pF,50V		
C184	Not assigned			
C185	Cer,(CK924C1H104M)	0.1µF,±20%,50V		
C186	Var,cer,(TZ03Z070A)	7pF,100V		
J 1	Not assigned			
J 2	Not assigned			
J 3	Connector,(27DP-R-PC)			
J 4	Not assigned			
J 5	Not assigned			
J 6	Connector,(27DP-LP-1.5)			
J 7	Connector,(27DP-LP-1.5)			
J 8	Connector, (HIF3-40P-2.54DSA)			
J 9 to J17	Not assigned			
J18	Connector,(27DP-R-PC)			
J19	Connector,(27DP-R-PC)			
J20	Connector,(27DP-R-PC)			
J21	Connector,(27DP-R-PC)			
K 1	Relay,(NF2E-DC12V)			
K 2	Relay,(NF2E-DC12V)			
K 3	Relay,(NF2E-DC12V)			
K 4	Relay,(NF2E-DC12V)			
K 5	Relay,(NF2E-DC12V)			
K 6	Relay,(NF2E-DC12V)			
L 1	Microinductor, (LV1-3R3)	3.3µH		
L 2	Microinductor, (LV1-3R3)	3.3µH		
L 3	Microinductor, (LV1-4R7)	4.7µH		
L 4	Microinductor, (LV1-4R7)	4.7µH		
L 5	Not assigned			
L 6	Not assigned			
L 7	Microinductor, (LV1-101)	100µH		
L 8	Coil,(34L55686C)	0.13µH		
L 9	Coil,(34L55686C)	0.13µH		
L10	Not assigned			

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
L11	Not assigned			
L12	Microinductor, (LV1-3R3)	3.3μH		
L13	Microinductor, (LV1-1R5)	1.5μH		
L14	Microinductor, (LV1-1R5)	1.5μH		
L15	Microinductor, (LV2-681)	680μH		
L16	Microinductor, (LV2-332)	3300μH		
L17	Microinductor, (LV2-222)	2200μH		
L18	Microinductor, (LV2-152)	1500μH		
L19	Microinductor, (LV1-150)	15μH		
L20	Not assigned			
L21	Microinductor, (LV1-220)	22μH		
L22	Not assigned			
L23	Microinductor, (LV1-101)	100μH		
L24	Microinductor, (LV1-470)	47μH		
L25	Microinductor, (LV1-3R3)	3.3μH		
L26	Microinductor, (LV1-4R7)	4.7μH		
L27	Microinductor, (LV1-4R7)	4.7μH		
L28	Microinductor, (LV1-220)	22μH		
L29	Microinductor, (LV1-220)	22μH		
L30	Microinductor, (LV1-330)	33μH		
L31	Microinductor, (LV1-330)	33μH		
L32	Not assigned			
L33	Not assigned			
L34	Not assigned			
L35	Microinductor, (LV2-151)	150μH		
L36	Microinductor, (LV2-101)	100μH		
L37	Microinductor, (LV2-151)	150μH		

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
L38	Microinductor, (LV2-151)	150μH		
L39	Microinductor, (LH1-102K)	1000μH		
L40	Not assigned			
L41	Microinductor, (LV1-100)	10μH		
L42	Microinductor, (LV1-330)	33μH		
L43	Microinductor, (LV1-3R3)	3.3μH		
L44	Microinductor, (LV1-330)	33μH		
L45	Microinductor, (LV1-6R8)	6.8μH		
L46	Microinductor, (LV1-330)	33μH		
L47	Microinductor, (LV1-150)	15μH		
Q 1	Tr,(2SC943)			
Q 2	Tr,(2SC943)			
Q 3	Tr,(2SC943)			
Q 4	Di,(1S953)			
Q 5	Tr,(2SC943)			
Q 6	Tr,(2SC943)			
Q 7	Tr,(2SC943)			
Q 8	Tr,(2SA603)			
Q 9	IC,(μPC91A)			
Q10	IC,(μPC177C)			
Q11	IC,(TD62004P)			
Q12	IC,(7406)			
Q13	IC,(7407)			
Q14	Not assigned			
Q15	Tr,(2SC943)			
Q16	Tr,(2SA603)			
Q17	Not assigned			
Q18	IC,(μPC91A)			
Q19	Tr,(2SC943)			
Q20	Tr,(2SC943)			
Q21	Tr,(2SC943)			
Q22	Di,(1S953)			
Q23	Di,(1S953)			
Q24	Di,(1S953)			
Q25	Di,(1S953)			
Q26	Tr,(2SC943)			
Q27	IC,(μPC103A)			

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
Q28	IC,(μPC91A)			
Q29	IC,(μPC177C)			
Q30	Tr,(2SC943)			
Q31	Tr,(2SC97A)			
Q32	Tr,(2SC943)			
Q33	Tr,(2SC943)			
Q34	Tr,(2SC943)			
Q35	Tr,(2SC943)			
Q36	Not assigned			
Q37	Tr,(2SC943)			
Q38	Tr,(2SC943)			
Q39	IC,(μPC91A)			
Q40	IC,(μPC91A)			
Q41	IC,(μPC177C)			
Q42	Tr,(2SC943)			
Q43	IC,(μPC91A)			
Q44	Tr,(3SK28)			
Q45	Tr,(2SA603)			
Q46	Di,(1S953)			
Q47	Di,(1S953)			
Q48	Di,(1S953)			
Q49	Di,(1S953)			
Q50	IC,(μPC177C)			
Q51	IC,(μPC258C)			
Q52	IC,(μPC258C)			
Q53	IC,(μPC258C)			
Q54	IC,(μPC91A)			
Q55	FET,(3SK28)			
Q56	Tr,(2SC943)			
Q57	Tr,(2SA603)			
Q58	IC,(TC4051BP)			
Q59	IC,(CA3080)			
Q60	Not assigned			
Q61	IC,(μPC107A)			
Q62	Tr,(2SA603)			
Q63	Not assigned			
Q64	IC,(μPC91A)			
Q65	IC,(μPC177C)			
Q66	Di,(1S953)			
Q67	Not assigned			
Q68	Tr,(2SC943)			
Q69	IC,(μPC91A)			
Q70	Di,(1S953)			
Q71	Not assigned			
Q72	Tr,(2SC97A)			
Q73	Tr,(2SC943)			
Q74	Tr,(2SC943)			

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Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
Q75	Tr,(2SC1044)			
Q76	Tr,(2SC1044)			
Q77	IC,(μPC91A)			
Q78	IC,(μPC177C)			
Q79	Di,breakdown,(RD5.1E)	4.8 to 5.37V,400mW		
Q80	IC,(μPC91A)			
Q81	Tr,(2SA603)			
Q82	IC,(μPC159A)			
Q83	IC,(μPC91A)			
Q84	IC,(μPC177C)			
Q85	Not assigned			
Q86	Not assigned			
Q87	Not assigned			
Q88	Tr,(2SC943)			
Q89	Di,(1S953)			
Q90	Di,(1S953)			
Q91	Di,(1S953)			
Q92	Di,(1S953)			
Q93	Tr,(2SC943)			
Q94	Tr,(2SC943)			
Q95	Tr,(2SC943)			
Q96	Tr,(2SA711)			
Q97	Tr,(2SA711)			
Q98	Tr,(2SC1044)			
Q99	Tr,(2SC1044)			
Q100	Tr,(2SC943)			
Q101	Tr,(2SC943)			
Q102	IC,(μPC159A)			
Q103	IC,(μPC91A)			
Q104	Not assigned			
Q105	Di,(1S953)			
Q106	Tr,(2SC943)			
Q107	Tr,(2SC943)			
Q108	Tr,(2SA603)			
Q109	Tr,(2SA603)			
Q110	Tr,(2SA603)			
Q111	Tr,(2SC943)			
Q112	Di,(1S953)			
Q113	Tr,(2SC943)			
Q114	Tr,(2SC943)			
Q115	IC,(74LS123)			
Q116	IC,(CA3080)			
Q117	FET,(3SK28)			
Q118	Di,(1S953)			
Q119	Tr,(2SA603)			
Q120	Not assigned			

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Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING	NOTE
Q121	Tr,(2SC943)		
Q122	Tr,(2SC943)		
Q123	Tr,(2SC943)		
Q124	Tr,(2SC943)		
Q125	Tr,(2SC943)		
Q126	IC,(μPC91A)		
Q127	Di,(1S953)		
Q128	Tr,(2SC943)		
Q129	IC,(74LS123)		
Q130	IC,(74LS00)		
Q131	Not assigned		
Q132	Not assigned		
Q133	Tr,(2SA603)		
Q134	Not assigned		
Q135	Not assigned		
Q136	IC,(μPC16312H)		
Q137	IC,(μPC14305H)		
Q138	IC,(μPC14312H)		
Q139	IC,(μPC91A)		
Q140	IC,(μPC177C)		
Q141	Not assigned		
Q142	Tr,(2SC943)		
R 1	CF,(ARD25T750J)	75Ω,±5%,1/4W	
R 2	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R 3	CF,(ARD25T330J)	33Ω,±5%,1/4W	
R 4	CF,(ARD25T104J)	100kΩ,±5%,1/4W	
R 5	CF,(ARD25T153J)	15kΩ,±5%,1/4W	
R 6	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W	
R 7	Not assigned		
R 8	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R 9	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W	
R 10	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R 11	Not assigned		
R 12	Not assigned		
R 13	Not assigned		
R 14	Not assigned		
R 15	CF,(RD1/4PX 174ΩD)	174Ω,±0.5%,1/4W	
R 16	CF,(RD1/4PX 174ΩD)	174Ω,±0.5%,1/4W	
R 17	CF,(RD1/4PX 79.3ΩD)	79.3Ω,±0.5%,1/4W	
R 18	CF,(RD1/4PX 332ΩD)	332Ω,±0.5%,1/4W	
R 19	CF,(RD1/4PX 332ΩD)	332Ω,±0.5%,1/4W	
R 20	CF,(RD1/4PX 35.7ΩD)	35.7Ω,±0.5%,1/4W	
R 21	CF,(RD1/4PX 654ΩD)	654Ω,±0.5%,1/4W	
R 22	CF,(RD1/4PX 654ΩD)	654Ω,±0.5%,1/4W	
R 23	CF,(RD1/4PX 17.4ΩD)	17.4Ω,±0.5%,1/4W	
R 24	CF,(RD1/4PX 1.3kΩF)	1.3kΩ,±1%,1/4W	
R 25	CF,(RD1/4PX 1.3kΩF)	1.3kΩ,±1%,1/4W	

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R26	CF,(RD1/4PX 8.66ΩF)	8.66Ω,±1%,1/4W		
R27	CF,(RD1/4PX 226ΩD)	226Ω,±0.5%,1/4W		
R28	CF,(RD1/4PX 226ΩD)	226Ω,±0.5%,1/4W		
R29	CF,(RD1/4PX 56.2ΩD)	56.2Ω,±0.5%,1/4W		
R30	Not assigned			
R31	Not assigned			
R32	Not assigned			
R33	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R34	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W		
R35	CF,(ARD25T681J)	680kΩ,±5%,1/4W		
R36	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R37	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R38	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R39	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R40	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R41	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R42	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R43	Not assigned			
R44	Not assigned			
R45	Not assigned			
R46	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R47	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R48	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R49	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R50	Not assigned			
R51	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R52	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R53	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R54	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R55	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R56	CF,(ARD25T151J)	150Ω,±5%,1/4W		
R57	CF,(ARD25T470J)	47Ω,±5%,1/4W		
R58	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R59	CF,(ARD25T560J)	56Ω,±5%,1/4W		
R60	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R61	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R62	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R63	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R64	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R65	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R66	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R67	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R68	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R69	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R70	CF,(ARD25T750J)	75Ω,±5%,1/4W		

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Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R71	Var,MF,(RJ-6P100Ω)	100Ω,1/2W		
R72	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R73	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R74	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R75	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R76	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R77	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R78	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R79	Not assigned			
R80	Not assigned			
R81	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R82	CF,(ARD25T102J)	1kΩ,±5%,1/4W		Q'ty 2, Parallel
R83	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R84	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R85	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R86	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R87	Not assigned			
R88	Not assigned			
R89	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R90	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R91	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R92	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R93	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R94	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R95	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R96	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R97	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R98	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R99	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R100	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R101	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R102	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R103	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R104	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R105	CF,(ARD25T301J)	300Ω,±5%,1/4W		
R106	CF,(ARD25T750J)	75Ω,±5%,1/4W		Q'ty 2, Parallel
R107	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R108	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R109	CF,(ARD25T330J)	33Ω,±5%,1/4W		Q'ty 2, Parallel
R110	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R111	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R112	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R113	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		

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Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R114	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R115	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R116	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W		
R117	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R118	Not assigned			
R119	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R120	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R121	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R122	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R123	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R124	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R125	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R126	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R127	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R128	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R129	CF,(ARD25T203J)	20kΩ,±5%,1/4W		
R130	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R131	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R132	CF,(ARD25T203J)	20kΩ,±5%,1/4W		
R133	CF,(ARD25T154J)	150kΩ,±5%,1/4W		
R134	CF,(ARD25T184J)	180kΩ,±5%,1/4W		
R135	CF,(ARD25T184J)	180kΩ,±5%,1/4W		
R136	CF,(ARD25T623J)	62kΩ,±5%,1/4W		
R137	CF,(ARD25T474J)	470kΩ,±5%,1/4W		
R138	CF,(ARD25T474J)	470kΩ,±5%,1/4W		
R139	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R140	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R141	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R142	Var,MF,(RJ-6P 50kΩ)	50kΩ,1/2W		
R143	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R144	Not assigned			
R145	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R146	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R147	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R148	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R149	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R150	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R151	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R152	Not assigned			
R153	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W		
R154	Thermistor,(OSD5-300-1)	300Ω		
R155	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R156	CF,(ARD25T470J)	47Ω,±5%,1/4W		
R157	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R158	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R159	CF,(ARD25T151J)	150Ω,±5%,1/4W		
R160	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R161	CF,(ARD25T560J)	56Ω,±5%,1/4W		
R162	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R163	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R164	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R165	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R166	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R167	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R168	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R169	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R170	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R171	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R172	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R173	CF,(ARD25T823J)	82kΩ,±5%,1/4W		
R174	CF,(ARD25T123J)	12kΩ,±5%,1/4W		
R175	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R176	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R177	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R178	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R179	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R180	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R181	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R182	CF,(ARD25T182J)	1.8kΩ,±5%,1/4W		
R183	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R184	CF,(ARD25T601J)	600Ω,±5%,1/4W		
R185	CF,(ARD25T102J)	1kΩ,±5%,1/4W		Q'ty 2, Parallel
R186	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R187	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R188	CF,(ARD25T470J)	47Ω,±5%,1/4W		
R189	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R190	CF,(ARD25T271J)	270Ω,±5%,1/4W		
R191	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		Q'ty 2, Parallel
R192	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R193	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R194	CF,(ARD25T * J)	4.7 to 220Ω,±5%,1/4W		Q'ty 0 or 1, *
R195	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R196	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R197	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R198	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R199	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R200	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R201	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R202	Var,MF,(RJ-6P 2kΩ)	2kΩ,1/2W		
R203	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R204	Thermistor,(OSD5-300-1)	300Ω		
R205	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R206	Var,MF,(RJ-6P 2kΩ)	2kΩ,1/2W		
R207	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R208	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R209	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R210	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R211	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R212	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R213	CF,(ARD25T601J)	600Ω,±5%,1/4W		
R214	CF,(ARD25T601J)	600Ω,±5%,1/4W		
R215	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R216	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R217	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R218	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R219	Var,MF,(RJ-6P 50kΩ)	50kΩ,1/2W		
R220	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R221	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R222	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R223	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R224	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R225	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R226	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R227	Not assigned			
R228	Not assigned			
R229	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R230	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R231	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R232	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R233	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R234	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R235	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R236	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R237	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R238	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R239	CF,(ARD25T470J)	47Ω,±5%,1/4W		
R240	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R241	CF,(ARD25T561J)	560Ω,±5%,1/4W		
R242	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R243	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R244	CF,(ARD25T * J)	4.7 to 100Ω,±5%,1/4W		Q'ty 0 or 1, *
R245	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R246	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R247	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R248	CF,(ARD25T * J)	4.7 to 100Ω,±5%,1/4W		Q'ty 0 or 1, *
R249	CF,(ARD25T181J)	180Ω,±5%,1/4W		
R250	MF,(RN14K2H471J)	470Ω,±5%,1/2W		

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R251	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R252	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R253	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R254	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R255	CF,(ARD25T601J)	600Ω,±5%,1/4W		
R256	CF,(ARD25T601J)	600Ω,±5%,1/4W		
R257	Var,MF,(RJ-6P 5kΩ)	5kΩ,1/2W		
R258	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R259	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R260	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R261	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R262	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R263	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R264	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R265	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R266	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R267	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R268	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R269	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R270	CF,(ARD25T392J)	3.9kΩ,±5%,1/4W		
R271	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R272	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R273	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R274	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R275	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R276	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R277	CF,(ARD25T181J)	180Ω,±5%,1/4W		
R278	CF,(ARD25T330J)	33Ω,±5%,1/4W		
R279	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R280	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R281	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R282	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R283	CF,(ARD25T223J)	22kΩ,±5%,1/4W		
R284	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R285	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R286	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R287	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R288	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R289	CF,(ARD25T271J)	270Ω,±5%,1/4W		
R290	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R291	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R292	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R293	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R294	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R295	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R296	MF,(RN14K2E1690D)	169Ω,±0.5%,1/4W		

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R297	MF,(RN14K2E61R9D)	61.9Ω,±0.5%,1/4W		
R298	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R299	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R300	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R301	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R302	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R303	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R304	CF,(ARD25T391J)	390Ω,±5%,1/4W		
R305	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R306	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R307	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R308	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R309	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R310	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R311	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R312	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R313	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R314	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R315	CF,(ARD25T271J)	270Ω,±5%,1/4W		
R316	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R317	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R318	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R319	CF,(ARD25T181J)	180Ω,±5%,1/4W		
R320	Var,MF,(RJ-6P 5kΩ)	5kΩ,1/2W		
R321	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R322	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R323	Not assigned			
R324	Not assigned			
R325	Not assigned			
R326	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R327	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R328	CF,(ARD25T823J)	82kΩ,±5%,1/4W		
R329	CF,(ARD25T123J)	12kΩ,±5%,1/4W		
R330	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R331	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R332	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R333	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R334	CF,(ARD25T683J)	68kΩ,±5%,1/4W		
R335	Not assigned			
R336	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R337	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R338	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R339	Not assigned			
R340	Not assigned			
R341	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W		
R342	CF,(ARD25T103J)	10kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-7 COMPONENT LIST OF ANALOG BOARD (I), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R343	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R344	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R345	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R346	CF,(ARD25T271J)	270Ω,±5%,1/4W		
R347	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R348	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R349	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R350	MF,(RS1FB 680ΩJ)	680Ω,±5%,1W		
R351	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R352	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R353	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R354	Not assigned			
R355	Not assigned			
R356	Not assigned			
R357	Not assigned			
R358	Not assigned			
R359	Not assigned			
R360	Not assigned			
R361	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R362	CF,(ARD25T220J)	22Ω,±5%,1/4W		
R363	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R364	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R365	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R366	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R367	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R368	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R369	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R370	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R371	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R372	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R373 to R375	Not assigned			
R376	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R377	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R378	Not assigned			
R379	CF,(ARD25T223J)	22kΩ,±5%,1/4W		
R380	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R381	Not assigned			
R382	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R383	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R384	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R385 to R388	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
Z 1	Filter,(TPS3.58MC)			

Table 7-8 COMPONENT LIST OF ANALOG BOARD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
C 1	Cer,((RPE111CH201G50)	200pF,±2%,50V		
C 2	Plast,(ECQ-P1 182FZ)	1800pF,±1%,100V		
C 3	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C 4	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C 5	Elect,(CE04C1C470)	47μF,±20%,16V		
C 6	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C 7	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C 8	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C 9	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C10	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C11	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C12	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C13	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C14	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C15	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C16	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C17	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C18	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C19	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C20	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C21	Elect,(CE04C1J100)	10μF,±20%,63V		
C22	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C23	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C24	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C25	Elect,(CE04C1J100)	10μF,±20%,63V		
C26	Tant,(CS02H1VR47M)	0.47μF,±20%,35V		
C27	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C28	Cer,(CK924C1H104M)	0.1μF,±20%,50V		Q'ty 0 to 4, *
C29	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C30	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C31	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C32	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C33	Cer,(CC924CH1H680J)	68pF,±5%,50V		
C34	Cer,(CC924CH1H330J)	33pF,±5%,50V		
C35	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C36	Not assigned			
C37	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C38	Not assigned			
C39	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C40	Elect,(CE04C1J4R7)	4.7μF,±20%,63V		
C41	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C42	Not assigned			
C43	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C44	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C45	Elect,(CE04C1J100)	10μF,±20%,63V		

( ): Manufacturer's part number

Table 7-8 COMPONENT LIST OF ANALOG BOARD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
C46 to C58	Not assigned			
C59	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C60	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C61	Cer,(CC924CH1H561J)	560pF,±5%,50V		
C62	Cer,(CC924CH1H561J)	560pF,±5%,50V		
C63	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C64	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C65	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C66	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C67	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C68	Plast,(ECQ-M1H223KZ)	0.022μF,±10%,50V		
C69	Plast,(ECQ-M1H222KZ)	2200pF,±10%,50V		
C70	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C71	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C72	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C73	Cer,(RPE111CH361G50)	360pF,±2%,50V		
C74	Cer,(CC924CH1H331J)	330pF,±5%,50V		
C75	Cer,(CC924CH1H820J)	82pF,±5%,50V		
C76	Cer,(RPE111CH161G50)	160pF,±2%,50V		
C77	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C78	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C79	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C80	Cer,(CC924CH1H331J)	330pF,±5%,50V		
C81	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C82	Tant,(CS02H1V010M)	1μF,±20%,35V		
C83	Not assigned			
C84	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C85	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C86	Cer,(CK924CH1H104M)	0.1μF,±20%,50V		
C87	Elect,(CE04C1J100)	10μF,±20%,63V		
C88	Elect,(CE04C1J100)	10μF,±20%,63V		
C89	Not assigned			
C90	Cer,(CC924CH1H331J)	330pF,±5%,50V		
C91	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C92	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C93	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C94	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C95	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C96	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C97	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C98	Not assigned			
C99	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C100	Not assigned			
C101	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		

( ): Manufacturer's part number

Table 7-8 COMPONENT LIST OF ANALOG BOARD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
C102	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C103	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C104	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C105	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C106	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C107	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C108	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C109	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C110	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C111	Not assigned			
C112	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C113	Not assigned			
C114	Not assigned			
C115	Not assigned			
C116	Elect,(CE04C1J100)	10μF,±20%,63V		
C117	Cer,(CC924CH1H470J)	47μF,±5%,50V		
C118	Cer,(CC924CH1H470J)	47μF,±5%,50V		
C119	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C120	Not assigned			
C121	Cer,(CC924CH1H330J)	33pF,±5%,50V		
C122	Cer,(CC924CH1H560J)	56pF,±5%,50V		
C123	Cer,(CC924CH1H120J)	12pF,±5%,50V		
C124	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C125	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C126	Cer,(CC924CH1H510J)	51pF,±5%,50V		
C127	Elect,(CE04C1A101)	100μF,±20%,10V		
C128	Elect,(CE04C1A101)	100μF,±20%,10V		
C129	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C130	Cer,(CC924CH1H331J)	330pF,±5%,50V		
C131	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C132	Cer,(CC924CH1H620J)	62pF,±5%,50V		
C133	Cer,(CC924CH1H300J)	30pF,±5%,50V		
C134	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C135	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C136	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C137	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C138	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C139	Elect,(CE04C1J2R2)	2.2μF,±20%,63V		
C140	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C141	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C142	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C143	Elect,(CE04C1C331)	330μF,±20%,16V		
C144	Elect,(CE04C1C331)	330μF,±20%,16V		
C145	Elect,(CE04C1J2R2)	2.2μF,±20%,63V		
C146	Elect,(CE04C1A331)	330μF,±20%,10V		
C147	Elect,(CE04C1A331)	330μF,±20%,10V		
C148	Cer,(CK924C1H104M)	0.1μF,±20%,50V		

( ): Manufacturer's part number

Table 7-8 COMPONENT LIST OF ANALOG BOARD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
C149	Cer,(RD340CK010CY50)	1pF,±0.25pF,50V		
C150	Cer,(RD340CK010CY50)	1pF,±0.25pF,50V		
C151	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C152	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C153	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V		Q'ty 0 to 3, *
C154	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V		Q'ty 0 to 3, *
C155	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V		Q'ty 0 to 3, *
C156	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V		Q'ty 0 to 3, *
C157	Not assigned			
C158	Not assigned			
C159	Not assigned			
C160	Not assigned			
C161	Not assigned			
C162	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C163	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C164	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C165	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C166	Cer,(CC924CH1H * J)	12 to 100pF,±5%,50V		Q'ty 0 to 3, *
C167	Cer,(CC924CH1H * J)	12 to 100pF,±5%,50V		Q'ty 0 to 3, *
C168	Not assigned			
C169	Not assigned			
C170	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C171	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V		Q'ty 0 to 3, *
C172	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V		Q'ty 0 to 3, *
C173	Cer,(CC924CH1H470J)	47pF,±5%,50V		
C174	Cer,(CC924CH1H * D)	4pF to 10pF,±0.5pF, 50V		Q'ty 0 to 3, *
	Cer,(CC924CH1H * J)	12pF to 1000pF,±5% 50V		
C175	Not assigned			
C176	Not assigned			
C177	Not assigned			
C178	Not assigned			
C179	Not assigned			
C180	Not assigned			
C181	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C182	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C183	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C184	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C185	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C186	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C187	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C188	Cer,(CK924C1H103M)	0.01μF,±20%,50V		

( ): Manufacturer's part number

Table 7-8 COMPONENT LIST OF ANALOG BOARD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
C189	Cer,(CK924C1H103M)	0.01μF,±20%,50V		
C190	Cer,(CC924CH1H * J)	47 to 470pF,±5%,50V		
C191	Cer,(CK924C1H222M)	2200pF,±20%,50V		
C192	Cer,(CK924C1H102J)	1000pF,±5%,50V		
C193	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
J 1	Connector,(DF1-10P-2.5DSA)			
J 2	Connector,(HIF3-16P-2.54DSA)			
J 3	Connector,(HIF3-34P-2.54DSA)			
J 4	Not assigned			
J 5	Not assigned			
J 6	Connector,(27DP-R-PC)			
J 7	Connector,(27DP-R-PC)			
J 8	Connector,(HIF3-34P-2.54DSA)			
J 9	Not assigned			
J 10	Not assigned			
J 11	Not assigned			
L 1	Coil,(339T20174F)	10μH		
L 2	Coil,(442T40365B)	1.1μH		
L 3	Coil,(LF8-220K)	22μH		
L 4	Coil,(LF8-220K)	22μH		
L 5	Coil,(LV1-150)	15μH		
L 6	Not assigned			
L 7	Coil,(LV1-100)	10μH		
L 8	Coil,(LV1-6R8)	6.8μH		
L 9	Coil,(LF8-220K)	22μH		
L 10	Coil,(LF8-220K)	22μH		
L 11	Coil,(LV1-220)	22μH		
L 12	Coil,(LV1-220)	22μH		
L 13	Coil,(LV1-330)	33μH		
L 14	Coil,(LV1-330)	33μH		
L 15	Coil,(LF8-220K)	22μH		
L 16	Coil,(LF8-220K)	22μH		
L 17	Coil,(LV1-1R5)	1.5μH		
L 18	Coil,(LF8-220K)	22μH		
L 19	Not assigned			
L 20	Coil,(LF8-220K)	22μH		
L 21	Coil,(LF8-220K)	22μH		
L 22	Not assigned			
L 23	Coil,(LV1-150)	15μH		
L 24	Coil,(LV1-4R7)	4.7μH		
L 25	Coil,(LV1-150)	15μH		

( ): Manufacturer's part number

* : Selected at factory

Table 7-8 COMPONENT LIST OF ANALOG BAORD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
Q103	IC,(μPC16305)			
Q104	IC,(HD10124)			
Q105	IC,(SHM-HUMC)			
Q106	IC,(LH0033CG)			
Q107	IC,(ADC816MC)			
Q108	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q109	Not assigned			
Q110	Di,(1S953)			
Q111	Di,(1S953)			
Q112	Di,(1S953)			
Q113	Di,(1S953)			
Q114	Tr,(2SC943)			
Q115	Tr,(2SA603)			
Q116	Not assigned			
Q117	Not assigned			
Q118	Not assigned			
Q119	Not assigned			
Q120	IC,(74LS367)			
Q121	IC,(74LS367)			
Q122	IC,(μPC14305H)			
Q123	Di,(1S953)			
Q124	Not assigned			
Q125	Not assigned			
Q126	Not assigned			
Q127	Not assigned			
Q128	Not assigned			
Q129	Not assigned			
Q130	IC,(μPC78L05)			
Q131	IC,(μPC78L05)			
Q132	IC,(μPC78L05)			
Q133	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q134	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q135	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q136	IC,(74S00)			
Q137	Tr,(2SC943)			
Q138	IC,(AM686CN)			
R 1	CF,(RD1/4PX 75ΩD)	75Ω,±0.5%,1/4W		
R 2	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R 3	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 4	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R 5	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R 6	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R 7	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 8	Not assigned			
R 9	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 10	CF,(ARD25T103J)	10kΩ,±5%,1/4W		

Table 7-8 COMPONENT LIST OF ANALOG BOARD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R 11	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R 12	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 13	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R 14	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R 15	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R 16	Not assigned			
R 17	Not assigned			
R 18	Not assigned			
R 19	Not assigned			
R 20	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R 21	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R 22	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 23	CF,(ARD25T * J)	68Ω to 10kΩ,±5%, 1/4W		Q'ty 1 to 3 *, Parallel
R 24	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R 25	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R 26	Var,MF,(RJ-6P 100Ω)	100Ω,±1/2W		
R 27	Not assigned			
R 28	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R 29	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R 30	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 31	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 32	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R 33	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R 34	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 35	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 36	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R 37	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 38	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 39	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R 40	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R 41	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 42	Var,MF,(RF-6P 20kΩ)	20kΩ,1/2W		
R 43	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R 44	CF,(ARD25T391J)	390Ω,±5%,1/4W		
R 45	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R 46	CF,(ARD25T * J)	4.7Ω to 1kΩ,±5%, 1/4W		Q'ty 0 to 2, *
R 47	CF,(ARD25T821J)	820Ω,±5%,1/4W		
R 48	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 49	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R 50	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R 51	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R 52	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R 53	CF,(ARD25T221J)	220Ω,±5R,1/4W		
R 54 to R67	Not assigned			

( ): Manufacturer's part number

Table 7-8 COMPONENT LIST OF ANALOG BOARD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R 68	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R 69	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 70	Not assigned			
R 71	Not assigned			
R 72	Not assigned			
R 73	Not assigned			
R 74	Not assigned			
R 75	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 76	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R 77	Not assigned			
R 78	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R 79	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R 80	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R 81	CF,(ARD25T391J)	390Ω,±5%,1/4W		
R 82	Not assigned			
R 83	Not assigned			
R 84	Not assigned			
R 85	CF,(ARD25T271J)	270Ω,±5%,1/4W		
R 86	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R 87	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R 88	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R 89	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R 90	Not assigned			
R 91	Not assigned			
R 92	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R 93	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 94 to R125	Not assigned			
R126	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R127	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R128	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R129	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W		
R130	CF,(ARD25T173J)	47kΩ,±5%,1/4W		
R131	CF,(ARD25T183J)	18kΩ,±5%,1/4W		
R132	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R133	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R134	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R135	Var,MF,(RJ-6P 100Ω)	100Ω,1/2W		
R136	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W		
R137	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R138	CF,(ARD25T510J)	51Ω,±5%,1/4W		
R139	CF,(ARD25T151J)	150Ω,±5%,1/4W		
R140	CF,(ARD25T121J)	120Ω,±5%,1/4W		

Table 7-8 COMPONENT LIST OF ANALOG BOARD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R141	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W		
R142	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W		
R143	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R144	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R145	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R146	Var,MF,(RJ-6P 2kΩ)	2kΩ,1/2W		
R147	Not assigned			
R148	Not assigned			
R149	Not assigned			
R150	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R151	Var,MF,(RJ-6P 10kΩ)	10kΩ,1/2W		
R152	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R153	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R154	CF,(ARD25T105J)	1MΩ,±5%,1/4W		
R155	CF,(ARD25T105J)	1MΩ,±5%,1/4W		
R156	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R157	CF,(ARD25T105J)	1MΩ,±5%,1/4W		
R158	Not assigned			
R159	Not assigned			
R160	Not assigned			
R161	Not assigned			
R162	Not assigned			
R163	Not assigned			
R164	Not assigned			
R165	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R166	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R167	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R168	Not assigned			
R168	Not assigned			
R170	Not assigned			
R171	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R172	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R173	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R174	CF,(ARD25T181J)	180Ω,±5%,1/4W		
R175	Not assigned			
R176	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R177	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R178	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R179	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R180	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R181	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R182	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R183	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R184	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R185	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R186	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R187	CF,(ARD25T221J)	220Ω,±5%,1/4W		

( ): Manufacturer's part number

Table 7-8 COMPONENT LIST OF ANALOG BOARD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R188	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R189	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R190	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R191	CF,(ARD25T * J)	4.7 to 100Ω,±5%,1/4W		Q'ty 0 or 1, *
R192	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R193	Not assigned			
R194	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R195	Not assigned			
R196	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R197	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R198	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R199	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R200	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W		
R201	Not assigned			
R202	Not assigned			
R203	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R204	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R205	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R206	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R207	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R208	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R209	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R210	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R211	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R212	CF,(ARD25T561J)	560Ω,±5%,1/4W		
R213	CF,(ARD25T601J)	600Ω,±5%,1/4W		
R214	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R215	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R216	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R217	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R218	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R219	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W		
R220	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R221	CF,(ARD25T * J)	220Ω to 1kΩ,±5%, 1/4W		Q'ty 1 to 3, *
R222	CF,(ARD25T821J)	820Ω,±5%,1/4W		
R223	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R224	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R225	CF,(ARD25T182J)	1.8kΩ,±5%,1/4W		
R226	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R227	CF,(ARD25T561J)	560Ω,±5%,1/4W		
R228	CF,(ARD25T392J)	3.9kΩ,±5%,1/4W		
R229	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R230	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R231	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R232	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		

Table 7-8 COMPONENT LIST OF ANALOG BOARD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R233	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R234	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R235	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R236	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R237	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R238	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R239	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R240	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R241	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R242	Not assigned			
R243	Not assigned			
R244	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R245	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R246	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R247	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R248	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R249	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R250	Not assigned			
R251	MF,(RN14K2E3480D)	348Ω,±0.5%,1/4W		
R252	MF,(RN14K2E2370D)	237Ω,±0.5%,1/4W		
R253	MF,(RN14K2E3480D)	348Ω,±0.5%,1/4W		
R254	MF,(RN14K2E2370D)	237Ω,±0.5%,1/4W		
R255	Var,MF,(RJ-6P 100Ω)	100Ω,1/2W		
R256	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R257	Var,MF,(RJ-6P 100Ω)	100Ω,1/2W		
R258	Var,MF,(RJ-6P 100Ω)	100Ω,1/2W		
R259	CF,(ARD25T511J)	510Ω,±5%,1/4W		
R260	CF,(ARD25T511J)	510Ω,±5%,1/4W		
R261	Not assigned			
R262	Not assigned			
R263	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R264	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R265	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R266 to R284	Not assigned			
R285	Not assigned			
R286	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R287	Not assigned			
R288	Not assigned			
R289	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R290	Not assigned			
R291	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R292	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R293	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R294	CF,(ARD25T333J)	33kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-8 COMPONENT LIST OF ANALOG BOARD (II), (NTSC)

CKT REF	DESCRIPTION	RATING		NOTE
R295	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R296	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R297	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R298	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R299	Var,MF,(RF-6P 20kΩ)	20kΩ,1/2W		
R300	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R301 to R312	Not assigned			
R313	CF,(ARD25T4R7J)	4.7Ω,±5%,1/4W		
R314	CF,(ARD25T4R7J)	4.7Ω,±5%,1/4W		
R315	CF,(ARD25T4R7J)	4.7Ω,±5%,1/4W		
R316	CF,(ARD25T4R7J)	4.7Ω,±5%,1/4W		
R317	Not assigned			
R318	Not assigned			
R319	Not assigned			
R320	Not assigned			
R321	Not assigned			
R322	Not assigned			
R323	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R324	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R325	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R326	CF,(ARD25T221J)	220Ω,±5%,1/4W		
X 1	XTAL OSC,(44X62727A)	3.579545 MHz		

( ): Manufacturer's part number

Table 7-9 COMPONENT LIST OF 50MHz CLOCK BOARD

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Cer,(CC924CH1H150J)	15pF,±5%,50V	
C 2	Cer,(CC924CH1H150J)	15pF,±5%,50V	
C 3	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C 4	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C 5	Cer,(CC924CH1H100D)	10pF,±0.5pF,50V	
C 6	Cer,(CC924CH1H100D)	10pF,±0.5pF,50V	
C 7	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V	
C 8	Elect,(CE04C1J2R2)	2.2µF,±20%,63V	
C 9	Elect,(CE04C1J2R2)	2.2µF,±20%,63V	
C10	Cer,(CC924CK1H020C)	2pF,±0.25pF,50V	
	Cer,(CC924CJ1H030C)	3pF,±0.25pF,50V	Q'ty 0 to 3 *
	Cer,(CC924CH1H * D)	4 to 10pF,±0.5pF,50V	
C11	Not assigned		
C12	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C13	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C14	Cer,(CC924CH1H331J)	330pF,±5%,50V	
C15	Cer,(CK924C1H223M)	0.022µF,±20%,50V	
C16	Elect,(CE04C1C470)	47µF,±20%,16V	
C17	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C18	Elect,(CE04C1J100)	10µF,±20%,63V	
C19	Cer,(CC924CH1H220J)	22pF,±5%,50V	
C20	Not assigned		
C21	Not assigned		
C22	Elect,(CE04C1J100)	10µF,±20%,63V	
C23	Elect,(CE04C1J100)	10µF,±20%,63V	
C24	Elect,(CE04C1J100)	10µF,±20%,63V	
C25	Elect,(CE04C1J100)	10µF,±20%,63V	
C26	Cer,(CK924C1H104M)	0.1µF,±20%,50V	
C27	Cer,(CK924C1H104M)	0.1µF,±20%,50V	
C28	Cer,(CK924C1H104M)	0.1µF,±20%,50V	Q'ty 1 to 10
C29	Not assigned		
C30	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C31	Cer,(CC924CH1H100D)	10pF,±0.5pF,50V	
C32	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V	
C33	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V	Q'ty 0 to 3, *
C34	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C35	Cer,(CK924C1H104M)	0.1µF,±20%,50V	
C36	Cer,(CC924CH1H151J)	150pF,±5%,50V	
C37	Cer,(CK924C1H104M)	0.1µF,±20%,50V	
C38	Cer,(CC924CH1H060D)	6pF,±0.5pF,50V	
C39	Cer,(CC924CH1H * J)	12 to 100pF,±5%,50V	Q'ty 0 to 3, *
J 1	Connector,(HIF3-40P-2.54DSA)		

( ): Manufacturer's part number

Table 7-9 COMPONENT LIST OF 50MHz CLOCK BOARD

CKT REF	DESCRIPTION	RATING		NOTE
K 1	Relay,(NR-HD-12V (AE-5343))			
L 1	Coil,(34L55681D)			
L 2	Coil,(34L55681E)			
Q 1	Di,varicap,(FC53M)			
Q 2	Di,varicap,(FC53M)			
Q 3	FET,(2SK55E)			
Q 4	FET,(2SK55E)			
Q 5	IC,(μPC16305H)			
Q 6	IC,(HD10125)			
Q 7	Di,breakdown,(1S2192)	7.7 to 8.7V,250mW		
Q 8	Tr,(2SC1216)			
Q 9	IC,(μPC258C)			
Q10	Di,breakdown,(RD2.7E)	2.5 to 2.93V,400mW		
Q11	Di,breakdown,(RD2.7E)	2.5 to 2.93V,400mW		
Q12	IC,(74LS290)			
Q13	IC,(74LS290)			
Q14	IC,(74LS04)			
Q15	IC,(74LS123)			
Q16	IC,(74LS74A)			
Q17	IC,(74AS163)			
Q18	IC,(74AS163)			
Q19	IC,(74S04)			
Q20	IC,(74LS04)			
Q21	IC,(74LS123)			
Q22	IC,(74S20)			
Q23	IC,(74LS123)			
Q24	IC,(74S04)			
Q25	IC,(74S00)			
Q26	IC,(74S00)			
Q27	Not assigned			
Q28	IC,(7406)			
Q29	IC,(74S85)			
Q30	IC,(74S85)			
Q31	Di,breakdown,(RD9.1E)	8.29 to 9.3V,400mW		
Q32	Di,(1S953)			
Q33	Di,(1S953)			
Q34	Di,(1S953)			
R 1	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 2	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 3	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 4	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R 5	CF,(ARD25T680J)	68Ω,±5%,1/4W		

( ): Manufacturer's part number

Table 7-9 COMPONENT LIST OF 50MHz CLOCK BOARD

CKT REF	DESCRIPTION	RATING		NOTE
R 6	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R 7	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R 8	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 9	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R10	Not assigned			
R11	Not assigned			
R12	CF,(ARD25T510J)	51Ω,±5%,1/4W		
R13	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R14	CF,(ARD25T510J)	51Ω,±5%,1/4W		
R15	Not assigned			
R16	Not assigned			
R17	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R18	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R19	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R20	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R21	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R22	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R23	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R24	CF,(ARD25T*J)	10 to 68kΩ,±5%,1/4W		
R25	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R26	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W		
R27	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R28	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R29	Not assigned			
R30	Not assigned			
R31	CF,(ARD25T223J)	22kΩ,±5%,1/4W		
R32	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R33	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R34	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R35	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R36	CF,(ARD25T223J)	22kΩ,±5%,1/4W		
R37	CF,(ARD25T512J)	5.1kΩ,±5%,1/4W		
R38	CF,(ARD25T6R8J)	6.8Ω,±5%,1/4W		
R39	CF,(ARD25T6R8J)	6.8Ω,±5%,1/4W		
R40	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R41	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R42	CF,(ARD25T * J)	100Ω to 1.5kΩ,±5%, 1/4W		Q'ty 0 to 2,*
R43	CF,(ARD25T * J)	100Ω to 1.5kΩ,±5%, 1/4W		Q'ty 0 to 2,*
Z 1	Delay line,(10ns)	DFS020(2m)		
Z 2	Delay line,(20ns)	DFS020(4m)		

( ): Manufacturer's part number

Table 7-10 COMPONENT LIST OF POWER BOARD

CKT REF	DESCRIPTION	RATING		NOTE
C 1	Elect,(CE02W1J332)	3300μF,±20%,63V		
C 2	Elect,(CE02W1J332)	3300μF,±20%,63V		
C 3	Elect,(CE02W1V472)	4700μF,±20%,35V		
C 4	Elect,(CE02W1V472)	4700μF,±20%,35V		
C 5	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C 6	Elect,(CE04C1J4R7)	4.7μF,±20%,63V		
C 7	Elect,(FZT2H1E471)	470μF,25V		
C 8	Elect,(CE04C1E101)	100μF,±20%,25V		
C 9	Elect,(CE04C1V470)	47μF,±20%,35V		
C10	Elect,(CE04C1V470)	47μF,±20%,35V		
C11	Not assigned			
C12	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C13	Elect,(CE04C1J4R7)	4.7μF,±20%,63V		
C14	Elect,(FZT2H1E471)	470μF,25V		
C15	Elect,(CE04C1E101)	100μF,±20%,25V		
C16	Elect,(CE04C1V470)	47μF,±20%,35V		
C17	Elect,(CE04C1V470)	47μF,±20%,35V		
C18	Not assigned			
C19	Elect,(CE04C1J2R2)	2.2μF,±20%,63V		
C20	Not assigned			
C21	Elect,(CE04C1V470)	47μF,±20%,35V		
C22	Elect,(FZT2H1E471)	470μF,25V		
C23	Elect,(CE04C1E101)	100μF,±20%,25V		
C24	Elect,(CE04C1J2R2)	2.2μF,±20%,63V		
C25	Elect,(CE04C1V470)	47μF,±20%,35V		
C26	Elect,(FZT2H1E471)	470μF,25V		
C27	Elect,(CE04C1E101)	100μF,±20%,25V		
C28	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C29	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C30	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C31	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C32	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C33	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C34	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C35	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
F 1	Fuse,(MF51NN250V2ADC01)	2A		
F 2	Fuse,(MF51NN250V1ADC01)	1A		
F 3	Fuse,(MF51NN250V2ADC01)	2A		
F 4	Fuse,(MF51NN250V2ADC01)	2A		

( ): Manufacturer's part number

Table 7-10 COMPONENT LIST OF POWER BOARD

CRT REF	DESCRIPTION	RATING		NOTE
J 1	Connector,(DF1-20P-2.5DSA)			
J 2	Connector,(DF1-10S-2.5R24)			
J 3	Connector,(DF1-10P-2.5DSA)			
J 4	Connector,(DF1-10S-2.5R24)			
J 5	Connector,(DF1-10P-2.5DSA)			
J 6	Not assigned			
J 7	Not assigned			
J 8	Not assigned			
J 9	Not assigned			
J10	Connector,(DF1-10P-2.5DSA)			
J11	Connector,(DF1-20P-2.5DSA)			
L 1	Coil,(SF-T12-150)	1mH,1.5A		
L 2	Coil,(SF-T8-50D)	125μH,2A		
L 3	Coil,(SF-T12-150)	1mH,1.5A		
L 4	Coil,(SF-T8-50D)	125μH,2A		
L 5	Coil,(SKC-105B)	200μH,5A		
L 6	Coil,(SF-T12-50)	100μH,5A		
L 7	Coil,(SKC-105B)	200μH,5A		
L 8	Coil,(SF-T12-50)	100μH,5A		
M 1	Timer,(TM-0)			
Q 1	Rectifier,(RB-402-LFD)			
Q 2	Rectifier,(RB-402-LFD)			
Q 3	Rectifier,(D5FB20)			
Q 4	Rectifier,(D5FB20)			
Q 5	Not assigned			
Q 6	Tr,(2SA708)			
Q 7	Tr,(2SC2718)			
Q 8	Tr,(2SC2718)			
Q 9	Di,breakdown,(RD24E)	22.05 to 24.85V, 400mW		
Q10	Not assigned			
Q11	Di,(1S1834)			
Q12	Di,(1S1834)			

( ): Manufacturer's part number

Table 7-10 COMPONENT LIST OF POWER BOARD

CKT REF	DESCRIPTION	RATING		NOTE
Q13	Di,(1S1834)			
Q14	Di,breakdown,(RD13E)	12.11 to 13.66V,400mW		
Q15	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q16	IC,(μPC141A)			
Q17	IC,(SI-3152P)			
Q18	IC,(μPC14312)			
Q19	Not assigned			
Q20	Not assigned			
Q21	Not assigned			
Q22	Tr,(2SA708)			
Q23	Tr,(2SC2718)			
Q24	Tr,(2SC2718)			
Q25	Di,breakdown,(RD24E)	22.05 to 24.85V,400mW		
Q26	Di,(1S1834)			
Q27	Di,(1S1834)			
Q28	Di,(1S1834)			
Q29	Di,breakdown,(RD13E)	12.11 to 13.66V,400mW		
Q30	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q31	Not assigned			
Q32	IC,(μPC141A)			
Q33	IC,(μPC16315)			
Q34	IC,(μPC16312)			
Q35	Tr,(2SC2199)			
Q36	Tr,(2SC2199)			
Q37	Tr,(2SC2199)			
Q38	Tr,(2SC2199)			
Q39	Tr,(2SA708)			
Q40	Not assigned			
Q41	Di,(1S1834)			
Q42	Di,(1S1834)			
Q43	Di,breakdown,(RD5.1E)	4.8 to 5.37V,400mW		
Q44	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q45	IC,(μPC141A)			
Q46	Not assigned			
Q47	Not assigned			
Q48	Not assigned			
Q49	Tr,(2SA708)			
Q50	Not assigned			
Q51	Di,(1S1834)			
Q52	Di,(1S1834)			
Q53	Di,breakdown,(RD5.1E)	4.8 to 5.37V,400mW		
Q54	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q55	IC,(μPC141A)			

( ): Manufacturer's part number

Table 7-10 COMPONENT LIST OF POWER BOARD

CKT REF	DESCRIPTION	RATING		NOTE
R 1	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R 2	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R 3	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R 4	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 5	CF,(ARD25T220J)	22Ω,±5%,1/4W		
R 6	CF,(ARD25T105J)	1MΩ,±5%,1/4W		
R 7	CF,(ARD25T183J)	18kΩ,±5%,1/4W		
R 8	CF,(ARD25T182J)	1.8kΩ,±5%,1/4W		
R 9	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R10	Not assigned			
R11	Not assigned			
R12	Not assigned			
R13	Not assigned			
R14	Not assigned			
R15	Not assigned			
R16	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R17	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R18	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R19	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R20	Not assigned			
R21	CF,(ARD25T220J)	22Ω,±5%,1/4W		
R22	CF,(ARD25T105J)	1MΩ,±5%,1/4W		
R23	CF,(ARD25T183J)	18kΩ,±5%,1/4W		
R24	CF,(ARD25T182J)	1.8kΩ,±5%,1/4W		
R25	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R26	Not assigned			
R27	Not assigned			
R28	Not assigned			
R29	Not assigned			
R30	Not assigned			
R31	Not assigned			
R32	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R33	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R34	CF,(ARD25T220J)	22Ω,±5%,1/4W		
R35	CF,(ARD25T105J)	1MΩ,±5%,1/4W		
R36	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R37	CF,(ARD25T182J)	1.8kΩ,±5%,1/4W		
R38	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R39	Not assigned			
R40	Not assigned			
R41	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R42	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R43	CF,(ARD25T220J)	22Ω,±5%,1/4W		
R44	CF,(ARD25T105J)	1MΩ,±5%,1/4W		
R45	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R46	CF,(ARD25T182J)	1.8kΩ,±5%,1/4W		
R47	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		

( ): Manufacturer's part number

Table 7-10 COMPONENT LIST OF POWER BOARD

CKT REF	DESCRIPTION	RATING		NOTE
R48	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R49	CF,(ARD25T105J)	1MΩ,±5%,1/4W		
R50	MF,(RN14K2E1001D)	1kΩ,±0.5%,1/4W		
R51	CF,(RS1FB 10ΩJ)	10Ω,±5%,1W		Q'ty 2, Parallel
R52	CF,(RS1FB 10ΩJ)	10Ω,±5%,1W		Q'ty 2, Parallel
R53	CF,(RS1FB 10ΩJ)	10Ω,±5%,1W		Q'ty 2, Parallel
R54	CF,(RS1FB 10ΩJ)	10Ω,±5%,1W		Q'ty 2, Parallel

( ): Manufacturer's part number

Table 7-11 COMPONENT LIST OF MOTHER BOARD

CKT REF	DESCRIPTION	RATING		NOTE
J 1	Connector,(225J-23621-587)			
J 2	Connector,(225J-23621-587)			
J 3	Connector,(225J-23621-587)			
J 4	Connector,(225J-23621-587)			
J 5	Connector,(225J-23621-587)			
J 6	Connector,(DF1-20P-2.5DSA)			
J 7	Connector,(HIF23A-16D-AA10S)			
J 8	Connector,(HIF23A-34D-AA10S)			
J 9	Connector,(HIF23A-40D-AA10S)			
J10	Connector,(HIF23A-40D-AA20S)			
J11	Connector,(PI021-05M)			

( ): Manufacturer's part number

Table 7-12 COMPONENT LIST OF LIMIT BOARD

CKT REF	DESCRIPTION	RATING		NOTE
C 1	Elect,(CE04W1E470)	47μF,±20%,25V		
J 1	Connector,(HIF3-20P-2.54DS)			
J 2	Not assigned			
J 3	Not assigned			
Q 1 to Q24	IC,(TC5023BP)			
Q25	IC,(TC4028BP)			
Q26	IC,(TC4508BP)			
Q27	IC,(74LS244)			
Q28	IC,(TC4049BP)			
Q29	IC,(TC4073BP)			
Q30	IC,(TC4073BP)			
Q31	IC,(TC4073BP)			
R 1 to R44	Single in-line array, (IHR-8-104JA)	100kΩ x 8,1/8W		
S 1 to S44	Switch,(DIP-A(8))			

( ): Manufacturer's part number

Table 7-13 COMPONENT LIST OF LED BOARD

CKT REF	DESCRIPTION	RATING		NOTE
C 1	Elect,(CE02C1V470)	47µF,±20%,35V		
C 2	Cer,(CK924C1H104M)	0.1µF,±20%,50V		Q'ty 12
C 3	Not assigned			
C 4	Not assigned			
C 5	Not assigned			
C 6	Not assigned			
C 7	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C 8	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C 9	Not assigned			
C10	Elect,(CE02C1A220)	22µF,±20%,10V		
J 1	Connector,(HIF23A-26DBA40S)			
Q 1	LED,(LN229RP)			
Q 2	LED,(LN524GK)			
Q 3	LED,(LN524GK)			
Q 4	LED,(LN329GP)			
Q 5	LED,(LN329GP)			
Q 6	LED,(LN329GP)			
Q 7	LED,(LN329GP)			
Q 8	LED,(LN524GK)			
Q 9	LED,(LN524GK)			
Q10	IC,(74LS123)			
Q11	LED,(LN329GP)			
Q12	Tr,(TD62003)			
Q13	Tr,(TD62003)			
Q14	Tr,(µPA56C)			
Q15	Tr,(µPA56C)			
Q16	IC,(MM74C14)			
Q17	IC,(74LS04)			
Q18	IC,(74LS00)			
Q19	IC,(74LS74A)			
Q20	IC,(TC4514BP)			
Q21	IC,(74LS05)			
Q22	IC,(74LS04)			
Q23	IC,(74LS05)			
Q24	IC,(74LS04)			
Q25	IC,(µPD8279C-5)			
Q26	IC,(74LS367)			
Q27	IC,(74LS00)			
Q28	IC,(74LS74A)			
Q29 to Q42	LED,(LN33SGP)			

( ): Manufacturer's part number

Table 7-13 COMPONENT LIST OF LED BOARD

CKT REF	DESCRIPTION	RATING		NOTE
Q43 to Q56	Not assigned			
Q57 to Q69	LED,(LN33SGP)			
Q70 to Q82	Not assigned			
Q83 to Q95	LED,(LN33SGP)			
Q96	LED,(LN329GP)			
Q97	Tr,(TD62003)			
Q98	IC,(74LS138)			
Q99	Not assigned			
Q100	Tr,(PT350)			
Q101	Tr,(PT350)			
Q102	LED,(SE301A)			
Q103	LED,(SE301A)			
R 1	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R 2	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R 3	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R 4	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R 5	Single in-line array, (IHR-8-102JA)	1kΩ x 8,1/8W		
R 6	CF,(ARD25T150J)	15Ω,±5%,1/4W		
R 7	CF,(ARD25T150J)	15Ω,±5%,1/4W		
R 8	CF,(ARD25T150J)	15Ω,±5%,1/4W		
R 9	CF,(ARD25T150J)	15Ω,±5%,1/4W		
R 10	CF,(ARD25T150J)	15Ω,±5%,1/4W		
R 11	CF,(ARD25T150J)	15Ω,±5%,1/4W		
R 12	CF,(ARD25T150J)	15Ω,±5%,1/4W		
R 13	CF,(ARD25T150J)	15Ω,±5%,1/4W		
R 14	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R 15	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R 16	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R 17	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R 18	Not assigned			
R 19	Not assigned			
R 20	Not assigned			
R 21	Not assigned			
R 22	Not assigned			
R 23	Not assigned			

( ): Manufacturer's part number

Table 7-13 COMPONENT LIST OF LED BOARD

CKT REF	DESCRIPTION	RATING	NOTE
R24	Not assigned		
R25	CF,(ARD25T223J)	22kΩ,±5%,1/4W	
R26	CF,(ARD25T223J)	22kΩ,±5%,1/4W	
R27	CF,(ARD25T510J)	51Ω,±5%,1/4W	
R28	Var,MF,(RJ-6S 100Ω)	100Ω,1/2W	
S 1 to S14	Switch with green LED, (HL20-LSYG)		
S15	Encoder,(349H75412)		

( ): Manufacturer's part number

Table 7-14 CONPONENT LIST OF CONNECTOR BOARD

CKT REF	DESCRIPTION	RATING	NOTE
J 1	Connector,(HIF23A-34D-AA20S)		
J 2	Connector,(57L-20240-27CD35)		
S 1	Switch,(BP-8)		

( ): Manufacturer's part number

Table 7-15 CL OF VIDEO SIGNAL ANALYZER OVERALL CIRCUIT (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
F 1	Fuse,(MF51NN250V3.15A AC05)	3.15A		AC100V~127V
	Fuse,(MF51NN250V2AAC05)	2A		AC200V~254V
F 2	Fuse,(MF51NN250V3.15A AC05)	3.15A		AC100V~127V
	Fuse,(MF51NN250V2AAC05)	2A		AC200V~254V
G 1	Scale fan,(109S081)			
J 1	Connector,(DF1-20S-2.5R24)			
J 2	Not assigned			
J 3	Not assigned			
J 4	Not assigned			
J 5	Not assigned			
J 6	Not assigned			
J 7	Not assigned			
J 8	Not assigned			
J 9	Not assigned			
J10	Connector,(DF1-10S-2.5R24)			
J11	Connector,(DF1-20S-2.5R24)			
J12	Connector,(DF1-20S-2.5R24)			
J13	Connector,(DF1-10S-2.5R24)			
J14	Connector,(PI011-05F)			
J15	Connector,(PI011-05F)			
J16	Not assigned			
J17	Not assigned			
J18	Plug,(27DP-LP-1.5)			
J19	Plug,(27DP-LP-1.5)			
J20	Plug,(27DP-LP-1.5)			
J21	Plug,(27DP-LP-1.5)			
J22	Receptacle,(BNC-R-101)			
J23	Receptacle,(BNC-R-101)			
J24	Receptacle,(BNC-R-101)			
J25	Receptacle,(BNC-R-101)			
J26	Receptacle,(BNC-R-101)			
J27	Receptacle,(BNC-R-101)			
J28	Receptacle,(BNC-R-101)			
J29	Not assigned			
J30	Not assigned			

( ): Manufacturer's part number

Table 7-15 CL OF VIDEO SIGNAL ANALYZER OVERALL CIRCUIT

CKT REF	DESCRIPTION	RATING		NOTE
J31	Inlet,(44J66110 PA-125)			
J32	Terminal,(34E772)			
J33	Power cord,(34J76170)			
J34	Connector,(PI011-05F)			
J35	Connector,(BNC-R-101)			
J36	Connector,(BNC-R-101)			
J37	Connector,(BNC-R-101)			
R 1	Var,CF,(RV16YN10SB 500Ω)	500Ω		
S 1	Pushbutton,(44S69940 ESB-9997S)			
T 1	Power trans,(44T68716)			
V 1	Neon lamp,(34F75361 BNS-3RU-C)			
Z 1	D/A Board			44W69129
Z 2	Control Board (II)			44W69130
Z 3	Control Board (I)			44W69128
Z 4	I/O Board (I)			44W69126
Z 5	I/O Board (II)			44W69127
Z 6	Analog Board (I)			44W77716
Z 7	Analog Board (II)			44W77718
Z 8	50MHz Clock Board			44W69134
Z 9	Power Board			44W69124
Z10	Mother Board			44W69125
Z11	Limit Board			44W69131
Z12	LED Board			44W69123
Z13	Connector Board			44W69245
Z14	Line filter,(44Z69942 ZMB2203-13)			

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Not assigned		
C 2	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C 3	Elect,(CE04C1J2R2)	2.2μF,±20%,63V	
C 4	Elect,(CE04C1J100)	10μF,±20%,63V	
C 5	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C 6	Elect,(CE04C1J100)	10μF,±20%,63V	
C 7	Cer,(CC924CH1H150J)	15pF,±5%,50V	
C 8	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C 9	Not assigned		
C10	Cer,(RPE111CH301G50)	300pF,±2%,50V	
C11	Cer,(CC924CH1H471J)	470pF,±5%,50V	
C12	Cer,(CC924CH1H220J)	22pF,±5%,50V	
C13	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C14	Cer,(CC924CH1H470J)	47pF,±5%,50V	
C15	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C16	Cer,(CC924CH1H471J)	470pF,±5%,50V	
C17	Cer,(CC924CH1H680J)	68pF,±5%,50V	
C18	Plast,(ECQ-P1 392FZ)	3900pF,±1%,100V	
C19	Cer,(CC924CH1H331J)	330pF,±5%,50V	
C20	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C21	Cer,(CC924CH1H330J)	33pF,±5%,50V	
C22	Cer,(CC924CH1H331J)	330pF,±5%,50V	
C23	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C24	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C25	Cer,(CC924CH1H470J)	47pF,±5%,50V	
C26	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V	
C27	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V	
C28	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V	
C29	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V	
C30	Plast,(ECQ-P1 153FZ)	0.015μF,±1%,100V	
C31	Cer,(CC924CH1H471J)	470pF,±5%,50V	
C32	Cer,(CC924CH1H120J)	12pF,±5%,50V	
C33	Plast,(ECQ-P1 153FZ)	0.015μF,±1%,100V	
C34	Cer,(CC924CH1H471J)	470pF,5%,50V	
C35	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V	
C36	Cer,(CC924CK1H020C)	2pF,±0.25pF,50V	
	Cer,(CC924CJ1H030C)	3pF,±0.25pF,50V	Q'ty 0 or 1 *
	Cer,(CC924CH1H * D)	4 to 5pF,±0.5pF,50V	
C37	Cer,(CC924CJ1H030C)	3pF,±0.25pF,50V	
C38	Elect,(CE04C1J100)	10μF,±20%,63V	
C39	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C40	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V	
C41	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C42	Not assigned		
C43	Not assigned		
C44	Elect,(CE04C1J4R7)	4.7μF,±20%,63V	
C45	Cer,(CK924C1H104M)	0.1μF,±20%,50V	

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING	NOTE
C46	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C47	Cer,(RPE111CH431G50)	430pF,±2%,50V	
C48	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C49	Cer,(RPE111CH561G50)	560pF,±2%,50V	
C50	Cer,(CC924CH1H330J)	33pF,±5%,50V	
C51	Cer,(RPE111CH511G50)	510pF,±2%,50V	
C52	Cer,(RPE111CH391G50)	390pF,±2%,50V	
C53	Cer,(CC924CH1H471J)	470pF,±5%,50V	
C54	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C55	Cer,(CC924CH1H390J)	39pF,±5%,50V	
C56	Plast,(ECQ-P1 912FZ)	9100pF,±1%,100V	
C57	Plast,(ECQ-P1 134FZ)	0.13μF,±1%,100V	
C58	Plast,(ECQ-P1 163FZ)	0.016μF,±1%,100V	
C59	Plast,(ECQ-P1 184FZ)	0.18μF,±1%,100V	
C60	Plast,(ECQ-P1 334FZ)	0.33μF,±1%,100V	
C61	Plast,(ECQ-P1 512FZ)	5100pF,±1%,100V	
C62	Plast,(ECQ-P1 753FZ)	0.075μF,±1%,100V	
C63	Plast,(ECQ-P1 622FZ)	6200pF,±1%,100V	
C64	Not assigned		
C65	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C66	Plast,(ECQ-P1 302FZ)	3000pF,±1%,100V	
C67	Cer,(RPE111CH271G50)	270pF,±2%,50V	
C68	Elect,(CE04C1J100)	10μF,±20%,63V	
C69	Not assigned		
C70	Not assigned		
C71	Plast,(ECQ-P1 822FZ)	8200pF,±1%,100V	
C72	Plast,(ECQ-P1 752FZ)	7500pF,±1%,100V	
C73	Plast,(ECQ-P1 203FZ)	0.02μF,±1%,100V	
C74	Plast,(ECQ-P1 302FZ)	3000pF,±1%,100V	
C75	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C76	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C77	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C78	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C79	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V	
C80	Elect,(CE04C1E101)	100μF,±20%,25V	
C81	Elect,(CE04C1E101)	100μF,±20%,25V	
C82	Not assigned		
C83	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C84	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C85	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V	
C86	Cer,(CC924CH1H360J)	36pF,±5%,50V	
C87	Cer,(CC924CH1H * J)	15 to 150pF,±5%,50V	Q'ty 0 to 3, *
C88	Elect,(CE04C1J2R2)	2.2μF,±20%,63V	
C89	Elect,(CE04C1J2R2)	2.2μF,±20%,63V	
C90	Cer,(RPE111CH391G50)	390pF,±2%,50V	

( ) : Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING	NOTE
C 91	Cer,(CC924CH1H070D)	7pF,±0.5pF,50V	
C 92	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C 93	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V	
C 94	Cer,(CC924CH1H151J)	150pF,±5%,50V	
C 95	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C 96	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C 97	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C 98	Cer,(RPE111CH561G50)	560pF,±2%,50V	
C 99	Cer,(RPE111CH431G50)	430pF,±2%,50V	
C100	Cer,(RPE111CH561G50)	560pF,±2%,50V	
C101	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V	
C102	Elect,(CE04C1J100)	10μF,±20%,63V	
C103	Elect,(CE04C1J100)	10μF,±20%,63V	
C104	Not assigned		
C105	Cer,(CC924CH1H270J)	27pF,±5%,50V	
C106	Cer,(CC924CH1H470J)	47pF,±5%,50V	
C107	Cer,(CC924CH1H120J)	12pF,±5%,50V	
C108	Cer,(CC924CH1H100D)	10pF,±0.5pF,50V	
C109	Cer,(CC924CH1H510J)	51pF,±5%,50V	
C110	Cer,(RPE111CH391G50)	390pF,±2%,50V	
C111	Cer,(CC924CH1H220J)	22pF,±5%,50V	
C112	Cer,(CC924CH1H390J)	39pF,5%,50V	
C113	Elect,(CE04C1J100)	10μF,±20%,63V	
C114	Elect,(CE04C1J100)	10μF,±20%,63V	
C115	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C116	Cer,(CC924CK1H020C)	2pF,±0.25pF,50V	
C117	Elect,(CE04C1A101)	100μF,±20%,10V	
C118	Cer,(CK924C1H104M)	0.1μF,±20%,50V	
C119	Elect,(CE04C1J100)	10μF,±20%,63V	
C120	Elect,(CE04C1E220)	22μF,±20%,25V	
C121	Elect,(CE04C1A471)	470μF,±20%,10V	
C122	Elect,(CE04C1A471)	470μF,±20%,10V	
C123	Elect,(CE04C1A101)	100μF,±20%,10V	
C124	Cer,(RPE111CH181G50)	180pF,±2%,50V	
C125	Cer,(RPE111CH301G50)	300pF,±2%,50V	
C126	Cer,(CC924CH1H820J)	82pF,±5%,50V	
C127	Cer,(CC924CH1H620J)	62pF,±5%,50V	
C128	Cer,(CC924CH1H331J)	330pF,±5%,50V	
C129	Plast,(ECQ-P1 242FZ)	2400pF,±1%,100V	
C130	Cer,(CC924CH1H151J)	150pF,±5%,50V	
C131	Cer,(RPE111CH271G50)	270pF,±2%,50V	
C132	Cer,(CC924CH1H101J)	100pF,±5%,50V	
C133	Cer,(CC924CK1H020C)	2pF,±0.25pF,50V	Q'ty 0 or 1, *
	Cer,(CC924CJ1H030C)	3pF,±0.25pF,50V	
	Cer,(CC924CH1H * D)	4 to 10pF,±0.5pF, 50V	

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
C134	Not assigned			
C135	Not assigned			
C136	Not assigned			
C137	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C138	Elect,(CE04C1E220)	22μF,±20%,25V		
C139	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C140	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C141	Elect,(CE04C1A331)	330μF,±20%,10V		
C142	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C143	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C144	Elect,(CE04C1J220)	22μF,±20%,63V		
C145	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C146	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C147	Elect,(CE04C1J4R7)	4.7μF,±20%,63V		
C148	Elect,(CE04C1J100)	10μF,±20%,63V		
C149	Not assigned			
C150	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C151	Plast,(ECQ-P1 622FZ)	6200pF,±1%,100V		
C152	Plast,(ECQ-P1 202FZ)	2000pF,±1%,100V		
C153	Plast,(ECQ-P1 332FZ)	3300pF,±1%,100V		
C154	Plast,(ECQ-P1 362FZ)	3600pF,±1%,100V		
C155	Plast,(ECQ-P1 272FZ)	2700pF,±1%,100V		
C156	Plast,(ECQ-P1 472FZ)	4700pF,±1%,100V		
C157	Elect,(CE04C1A470)	47μF,±20%,10V		
C158	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C159	Elect,(CE04C1A470)	47μF,±20%,10V		
C160	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C161	Elect,(CE04C1A470)	47μF,±20%,10V		
C162	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C163	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C164	Not assigned			
C165	Not assigned			
C166	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C167	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C168	Elect,(CE04C1E101)	100μF,±20%,25V		
C169	Elect,(CE04C1E101)	100μF,±20%,25V		
C170	Elect,(CE04C1E101)	100μF,±20%,25V		
C171	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C172	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C173	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C174	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C175	Cer,(CC924CK1H020C)	2pF,±0.25pF,50V		Q'ty 0 to 2, *
	Cer,(CC924CJ1H030C)	3pF,±0.25pF,50V		
	Cer,(CC924CH1H * D)	4 to±10pF,±0.5pF,50V		
C176	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C177 to C181	Not assigned			

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
C182	Cer,(CC924CH1H221J)	220pF,±5%,50V		Parallel
	Cer,(CC924CH1H471J)	470pF,±5%,50V		Parallel
C183	Cer,(CC924CK1H020C)	2pF,±0.25pF,50V		
C184	Not assigned			
C185	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C186	Var,cer(TZ03Z070A)	7pF,100V		
J 1	Not assigned			
J 2	Not assigned			
J 3	Connector,(27DP-R-PC)			
J 4	Not assigned			
J 5	Not assigned			
J 6	Connector,(27DP-LP-1.5)			
J 7	Connector,(27DP-LP-1.5)			
J 8	Connector,(HIF-3-40p-2.54DSA)			
J 9	Not assigned			
J10	Not assigned			
J11	Not assigned			
J12	Not assigned			
J13	Not assigned			
J14	Not assigned			
J15	Not assigned			
J16	Not assigned			
J17	Not assigned			
J18	Connector,(27DP-R-PC)			
J19	Connector,(27DP-R-PC)			
J20	Connector,(27DP-R-PC)			
J21	Connector,(27DP-R-PC)			
K 1	Relay,(NF2E-DC12V)			
K 2	Relay,(NF2E-DC12V)			
K 3	Relay,(NF2E-DC12V)			
K 4	Relay,(NF2E-DC12V)			
K 5	Relay,(NF2E-DC12V)			
K 6	Relay,(NF2E-DC12V)			
L 1	Microinductor,(LV1-3R3)	3.3μH		
L 2	Microinductor,(LV1-3R3)	3.3μH		
L 3	Microinductor,(LV1-4R7)	4.7μH		
L 4	Microinductor,(LV1-4R7)	4.7μH		
L 5	Not assigned			
L 6	Not assigned			
L 7	Microinductor,(LV1-101)	100μH		

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
L 8	Coil,(34L55686B)	0.08μH		
L 9	Coil,(34L55686B)	0.08μH		
L10	Not assigned			
L11	Not assigned			
L12	Microinductor,(LV1-3R3)	3.3μH		
L13	Microinductor,(LV1-1R5)	1.5μH		
L14	Microinductor,(LV1-1R5)	1.5μH		
L15	Microinductor,(LV2-681)	680μH		
L16	Microinductor,(LV2-332)	3.3mH		
L17	Microinductor,(LV2-222)	2.2mH		
L18	Microinductor,(LV2-152)	1.5mH		
L19	Microinductor,(LV1-150)	15μH		
L20	Not assigned			
L21	Microinductor,(LV1-220)	22μH		
L22	Not assigned			
L23	Microinductor,(LV1-101)	100μH		
L24	Microinductor,(LV1-470)	47μH		
L25	Microinductor,(LV1-3R3)	3.3μH		
L26	Microinductor,(LV1-3R3)	3.3μH		
L27	Microinductor,(LV1-3R3)	3.3μH		
L28	Microinductor,(LV1-220)	22μH		
L29	Microinductor,(LV1-150)	15μH		
L30	Microinductor,(LV1-220)	22μH		
L31	Microinductor,(LV1-220)	22μH		
L32	Not assigned			
L33	Not assigned			
L34	Not assigned			
L35	Microinductor,(LV2-151)	150μH		
L36	Microinductor,(LV2-101)	100μH		
L37	Microinductor,(LV2-151)	150μH		
L38	Microinductor,(LV2-151)	150μH		
L39	Microinductor,(LH1-102K)	1mH		
L40	Not assigned			
L41	Microinductor,(LV1-100)	10μH		
L42	Microinductor,(LV1-330)	33μH		
L43	Microinductor,(LV1-3R3)	3.3μH		
L44	Microinductor,(LV1-330)	33μH		
L45	Microinductor,(LV1-6R8)	6.8μH		
L46	Microinductor,(LV1-330)	33μH		
L47	Microinductor,(LV1-150)	15μH		
Q 1	Tr,(2SC943)			
Q 2	Tr,(2SC943)			
Q 3	Tr,(2SC943)			
Q 4	Di,(1S953)			
Q 5	Tr,(2SC943)			

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
Q 6	Tr,(2SC943)			
Q 7	Tr,(2SC943)			
Q 8	Tr,(2SA603)			
Q 9	IC,(μPC91A)			
Q10	IC,(μPC177C)			
Q11	IC,(TD62004P)			
Q12	IC,(7406)			
Q13	IC,(7407)			
Q14	Not assigned			
Q15	Tr,(2SC943)			
Q16	Tr,(2SA603)			
Q17	Not assigned			
Q18	IC,(μPC91A)			
Q19	Tr,(2SC943)			
Q20	Tr,(2SC943)			
Q21	Tr,(2SC943)			
Q22	Di,(1S953)			
Q23	Di,(1S953)			
Q24	Di,(1S953)			
Q25	Di,(1S953)			
Q26	Tr,(2SC943)			
Q27	IC,(μPC103)			
Q28	IC,(μPC91A)			
Q29	IC,(μPC177C)			
Q30	Tr,(2SC943)			
Q31	Tr,(2SC97A)			
Q32	Tr,(2SC943)			
Q33	Tr,(2SC943)			
Q34	Tr,(2SC943)			
Q35	Tr,(2SC943)			
Q36	Not assigned			
Q37	Tr,(2SC943)			
Q38	Tr,(2SC943)			
Q39	IC,(μPC91A)			
Q40	IC,(μPC91A)			
Q41	IC,(μPC177C)			
Q42	Tr,(2SC943)			
Q43	IC,(μPC91A)			
Q44	FET,(3SK28)			
Q45	Tr,(2SA603)			
Q46	Di,(1S953)			
Q47	Di,(1S953)			
Q48	Di,(1S953)			
Q49	Di,(1S953)			
Q50	IC,(μPC177C)			
Q51	IC,(μPC258C)			
Q52	IC,(μPC258C)			
Q53	IC,(μPC258C)			

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Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
Q54	IC,(μPC91A)			
Q55	FET,(3SK28)			
Q56	Tr,(2SC943)			
Q57	Tr,(2SA603)			
Q58	IC,(TC4051BP)			
Q59	IC,(CA3080)			
Q60	Not assigned			
Q61	IC,(μPC107)			
Q62	Tr,(2SA603)			
Q63	Not assigned			
Q64	IC,(μPC91A)			
Q65	IC,(μPC177C)			
Q66	Di,(1S953)			
Q67	Not assigned			
Q68	Tr,(2SC943)			
Q69	IC,(μPC91A)			
Q70	Di,(1S953)			
Q71	Not assigned			
Q72	Tr,(2SC97A)			
Q73	Tr,(2SC943)			
Q74	Tr,(2SC943)			
Q75	Tr,(2SC1044)			
Q76	Tr,(2SC1044)			
Q77	IC,(μPC91A)			
Q78	IC,(μPC177C)			
Q79	Di,breakdown,(RD5.1E)	4.8 to 5.37V,400mV		
Q80	IC,(μPC91A)			
Q81	Tr,(2SA603)			
Q82	IC,(μPC159A)			
Q83	IC,(μPC91A)			
Q84	IC,(μPC177C)			
Q85	Not assigned			
Q86	Not assigned			
Q87	Not assigned			
Q88	Tr,(2SC943)			
Q89	Di,(1S953)			
Q90	Di,(1S953)			
Q91	Di,(1S953)			
Q92	Di,(1S953)			
Q93	Tr,(2SC943)			
Q94	Tr,(2SC943)			
Q95	Tr,(2SC943)			
Q96	Tr,(2SA711)			
Q97	Tr,(2SA711)			
Q98	Tr,(2SC1044)			
Q99	Tr,(2SC1044)			
Q100	Tr,(2SC943)			

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Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
Q101	Tr,(2SC943)			
Q102	IC,(μPC159A)			
Q103	IC,(μPC91A)			
Q104	Not assigned			
Q105	Di,(1S953)			
Q106	Tr,(2SC943)			
Q107	Tr,(2SC943)			
Q108	Tr,(2SA603)			
Q109	Tr,(2SA603)			
Q110	Tr,(2SA603)			
Q111	Tr,(2SC943)			
Q112	Di,(1S953)			
Q113	Tr,(2SC943)			
Q114	Tr,(2SC943)			
Q115	IC,(74LS123)			
Q116	IC,(CA3080)			
Q117	FET,(3SK28)			
Q118	Di,(1S953)			
Q119	Tr,(2SA603)			
Q120	Not assigned			
Q121	Tr,(2SC943)			
Q122	Tr,(2SC943)			
Q123	Tr,(2SC943)			
Q124	Tr,(2SC943)			
Q125	Tr,(2SC943)			
Q126	IC,(μPC91A)			
Q127	Di,(1S953)			
Q128	Tr,(2SC943)			
Q129	IC,(74LS123)			
Q130	IC,(74LS00)			
Q131	Not assigned			
Q132	Not assigned			
Q133	Tr,(2SA603)			
Q134	Not assigned			
Q135	Not assigned			
Q136	IC,(μPC16312H)			
Q137	IC,(μPC14305H)			
Q138	IC,(μPC14312H)			
Q139	IC,(μPC91A)			
Q140	IC,(μPC177C)			
Q141	Not assigned			
Q142	Tr,(2SC943)			

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R 1	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R 2	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R 3	CF,(ARD25T330J)	33Ω,±5%,1/4W		
R 4	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R 5	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R 6	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R 7	Not assigned			
R 8	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R 9	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R10	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R11	Not assigned			
R12	Not assigned			
R13	Not assigned			
R14	Not assigned			
R15	CF,(RD1/4PX 174ΩD)	174Ω,±0.5%,1/4W		
R16	CF,(RD1/4PX 174ΩD)	174Ω,±0.5%,1/4W		
R17	CF,(RD1/4PX 79.3ΩD)	79.3Ω,±0.5%,1/4W		
R18	CF,(RD1/4PX 332ΩD)	332Ω,±0.5%,1/4W		
R19	CF,(RD1/4PX 332ΩD)	332Ω,±0.5%,1/4W		
R20	CF,(RD1/4PX 35.7ΩD)	35.7Ω,±0.5%,1/4W		
R21	CF,(RD1/4PX 654ΩD)	654Ω,±0.5%,1/4W		
R22	CF,(RD1/4PX 654ΩD)	654Ω,±0.5%,1/4W		
R23	CF,(RD1/4PX 17.4ΩD)	17.4Ω,±0.5%,1/4W		
R24	CF,(RD1/4PX 1.3kΩF)	1.3kΩ,±1%,1/4W		
R25	CF,(RD1/4PX 1.3kΩF)	1.3kΩ,±1%,1/4W		
R26	CF,(RD1/4PX 8.66ΩF)	8.66Ω,±1%, 1/4W		
R27	CF,(RD1/4PX 226ΩD)	226Ω,±0.5%,1/4W		
R28	CF,(RD1/4PX 226ΩD)	226Ω,±0.5%,1/4W		
R29	CF,(RD1/4PX 56.2ΩD)	56.2Ω,±0.5%,1/4W		
R30	Not assigned			
R31	Not assigned			
R32	Not assigned			
R33	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R34	Var,MF,(RJ-6P 500Ω)	500Ω,±1/2W		
R35	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R36	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R37	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R38	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R39	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R40	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R41	CF,(ARD25T682J)	6.kkΩ,±5%,1/4W		
R42	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R43	Not assigned			
R44	Not assigned			
R45	Not assigned			
R46	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R47	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R48	CF,(ARD25T101J)	100Ω,±5%,1/4W		

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R49	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R50	Not assigned			
R51	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R52	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R53	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R54	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R55	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R56	CF,(ARD25T151J)	150Ω,±5%,1/4W		
R57	CF,(ARD25T470J)	47Ω,±5%,1/4W		
R58	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R59	CF,(ARD25T560J)	56Ω,±5%,1/4W		
R60	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R61	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R62	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R63	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R64	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R65	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R66	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R67	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R68	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R69	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R70	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R71	Var,MF,(RJ-6P 100Ω)	100Ω,1/2W		
R72	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R73	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R74	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R75	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R76	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R77	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R78	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R79	Not assigned			
R80	Not assigned			
R81	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R82	CF,(ARD25T102J)	1kΩ,±5%,1/4W		Q'ty 2, Parallel
R83	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R84	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R85	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R86	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R87	Not assigned			
R88	Not assigned			
R89	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R90	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R91	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R92	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R93	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R94	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R95	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R96	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R97	Var,MF,(RD-6P 1kΩ)	1kΩ,±1/2W		
R98	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R99	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R100	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R101	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R102	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R103	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R104	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R105	CF,(ARD25T301J)	300Ω,±5%,1/4W		
R106	CF,(ARD25T750J)	75Ω,±5%,1/4W		Q'ty 2, Parallel
R107	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R108	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R109	CF,(ARD25T330J)	33Ω,±5%,1/4W		Q'ty 2, Parallel
R110	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R111	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R112	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R113	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R114	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R115	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R116	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W		
R117	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R118	Not assigned			
R119	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R120	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R121	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R122	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R123	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R124	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R125	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R126	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R127	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R128	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R129	CF,(ARD25T203J)	20kΩ,±5%,1/4W		
R130	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R131	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R132	CF,(ARD25T203J)	20kΩ,±5%,1/4W		
R133	CF,(ARD25T154J)	150kΩ,±5%,1/4W		
R134	CF,(ARD25T184J)	180kΩ,±5%,1/4W		
R135	CF,(ARD25T184J)	180kΩ,±5%,1/4W		
R136	CF,(ARD25T623J)	62kΩ,±5%,1/4W		
R137	CF,(ARD25T474J)	470kΩ,±5%,1/4W		
R138	CF,(ARD25T474J)	470kΩ,±5%,1/4W		
R139	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R140	CF,(ARD25T103J)	10kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R141	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R142	Var,MF,(RJ-6P 50kΩ)	50kΩ,±1/2W		
R143	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R144	Not assigned			
R145	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R146	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R147	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R148	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R149	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R150	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R151	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R152	Not assigned			
R153	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W		
R154	Thermistor,(OSD5-300-1)	300Ω		
R155	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R156	CF,(ARD25T470J)	47Ω,±5%,1/4W		
R157	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R158	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R159	CF,(ARD25T151J)	150Ω,±5%,1/4W		
R160	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R161	CF,(ARD25T560J)	56Ω,±5%,1/4W		
R162	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R163	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R164	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R165	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R166	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R167	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R168	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R169	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R170	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R171	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R172	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R173	CF,(ARD25T823J)	82kΩ,±5%,1/4W		
R174	CF,(ARD25T123J)	12kΩ,±5%,1/4W		
R175	CF,(ARD25T222J)	2.2kΩx± 5%,1/4W		
R176	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R177	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R178	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R179	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R180	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R181	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R182	CF,(ARD25T182J)	1.8kΩ,±5%,1/4W		
R183	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R184	CF,(ARD25T601J)	600Ω,±5%,1/4		
R185	CF,(ARD25T102J)	1KΩ,±5%,1/4W		Q'ty 2, Parallel
R186	CF,(ARD25T750J)	75Ω,±5%,1/4		

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R187	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R188	CF,(ARD25T470J)	47Ω,±5%,1/4W		
R189	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R190	CF,(ARD25T271J)	270Ω,±5%,1/4W		
R191	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		Q'ty 2, Parallel
R192	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R193	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R194	CF,(ARD25T * J)	4.7 to 220Ω,±5%,1/4W		Q'ty 0 or 1, *
R195	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R196	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R197	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R198	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R199	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R200	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R201	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R202	Var,MF,(RJ-6P 2kΩ)	2kΩ,1/2W		
R203	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R204	Thermistor,(OSD5-300-1)	300Ω		
R205	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R206	Var,MF,(RJ-6P 2kΩ)	2kΩ,1/2W		
R207	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R208	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R209	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R210	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R211	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R212	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R213	CF,(ARD25T601J)	600Ω,±5%,1/4W		
R214	CF,(ARD25T601J)	600Ω,±5%,1/4W		
R215	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R216	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R217	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R218	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R219	Var,MF,(RJ-6P 50kΩ)	50kΩ,1/2W		
R220	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R221	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R222	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R223	MF,(RN14K2H222J)	2.2kΩ,±5%,1/4W		
R224	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R225	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R226	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R227	Not assigned			
R228	Not assigned			
R229	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R230	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R231	CF,(ARD25T102J)	1kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R232	CF,(ARD25T102J)	1KΩ,±5%,1/4W		
R233	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R234	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R235	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R236	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R237	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R238	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R239	CF,(ARD25T470J)	47Ω,±5%,1/4W		
R240	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R241	CF,(ARD25T561J)	560Ω,±5%,1/4W		
R242	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R243	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R244	CF,(ARD25T * J)	4.7 to 100Ω,±5%,1/4W		Q'ty 0 or 1, *
R245	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R246	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R247	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R248	CF,(ARD25T * J)	4.7 to 100Ω,±5%,1/4W		Q'ty 0 or 1, *
R249	CF,(ARD25T181J)	180Ω,±5%,1/4W		
R250	MF,(RN14K2H471J)	470Ω,±5%,1/2W		
R251	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R252	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R253	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R254	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R255	CF,(ARD25T601J)	600Ω,±5%,1/4W		
R256	CF,(ARD25T601J)	600Ω,±5%,1/4W		
R257	Var,MF,(RJ-6P 5kΩ)	5kΩ,1/2W		
R258	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R259	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R260	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R261	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R262	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R263	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R264	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R265	MF,(RN14K2H222J)	2.2kΩ,±5%,1/4W		
R266	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R267	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R268	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R269	CF,(ARD25T221J)	220kΩ,±5%,1/4W		
R270	CF,(ARD25T392J)	3.9kΩ,±5%,1/4W		
R271	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R272	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R273	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R274	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R275	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R276	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R277	CF,(ARD25T181J)	180kΩ,±5%,1/4W		
R278	CF,(ARD25T330J)	33Ω,±5%,1/4W		
R279	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R280	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R281	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R282	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R283	CF,(ARD25T223J)	22kΩ,±5%,1/4W		
R284	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R285	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R286	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R287	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R288	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R289	CF,(ARD25T271J)	270Ω,±5%,1/4W		
R290	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R291	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R292	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R293	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R294	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R295	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R296	MF,(RN14K2E1690D)	169Ω,±0.5%,1/4W		
R297	MF,(RN14K2E61R9D)	61.9Ω,±0.5%,1/4W		
R298	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R299	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R300	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R301	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R302	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R303	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R304	CF,(ARD25T391J)	390Ω,±5%,1/4W		
R305	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R306	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R307	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R308	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R309	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R310	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R311	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R312	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R313	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R314	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R315	CF,(ARD25T271J)	270Ω,±5%,1/4W		
R316	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R317	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R318	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R319	CF,(ARD25T181J)	180Ω,±5%,1/4W		
R320	Var,MF,(RJ-6P 5kΩ)	5kΩ,1/2W		
R321	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R322	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R323	Not assigned			

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R324	Not assigned			
R325	Not assigned			
R326	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R327	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R328	CF,(ARD25T823J)	82kΩ,±5%,1/4W		
R329	CF,(ARD25T123J)	12kΩ,±5%,1/4W		
R330	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R331	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R332	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R333	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R334	CF,(ARD25T683J)	68kΩ,±5%,1/4W		
R335	Not assigned			
R336	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R337	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R338	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R339	Not assigned			
R340	Not assigned			
R341	Var.MF,(RJ-6P 500Ω)	500Ω,1/2W		
R342	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R343	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R344	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R345	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
F346	CF,(ARD25T271J)	270Ω,±5%,1/4W		
R347	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R348	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R349	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R350	MF,(RS1FB 680ΩJ)	680Ω,±5%,1W		
R351	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R352	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R353	Var,MF,(RJ-6P 1kΩ)	1kΩ,±1/2W		
R354	Not assigned			
R355	Not assigned			
R356	Not assigned			
R357	Not assigned			
R358	Not assigned			
R359	Not assigned			
R360	Not assigned			
R361	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R362	CF,(ARD25T220J)	22Ω,±5%,1/4W		
R363	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R364	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R365	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R366	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R367	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R368	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R369	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
F370	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-16 COMPONENT LIST OF ANALOG BOARD (I), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R371	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R372	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R373 to R375	Not assigned			
R376	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R377	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R378	Not assigned			
R379	CF,(ARD25T223J)	22kΩ,±5%,1/4W		
R380	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R381	Not assigned			
R382	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R383	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R384	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R385 to R388	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
Z 1	Filter,(TPS4.43MC)	100Ω,±5%,1/4W		

( ): Manufacturer's part number

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
C 1	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C 2	Plast,(ECQ-P1 152FZ)	1500pF,±1%,100V		
C 3	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C 4	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C 5	Elect,(CE04C1C470)	47μF,±20%,16V		
C 6	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C 7	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C 8	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C 9	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C10	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C11	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C12	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C13	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C14	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C15	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C16	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C17	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C18	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C19	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C20	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C21	Elect,(CE04C1J100)	10μF,±20%,63V		
C22	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C23	Cer,(RPE111CH121G50)	120pF,±2%,50V		
C24	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C25	Elect,(CE04C1J100)	10μF,±20%,63V		
C26	Tant,(CS02H1VR47M)	0.47μF,±20%,35V		
C27	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C28	Cer,(CK924C1H104M)	0.1μF,±20%,50V		Q'ty 0 to 4
C29	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C30	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C31	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C32	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C33	Cer,(CC924CH1H * J)	12 to 100pF,±5%,50V		Q'ty 0 to 2, *
C34	Cer,(CC924CH1H330J)	33pF,±5%,50V		
C35	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C36	Not assigned			
C37	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C38	Not assigned			
C39	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C40	Elect,(CE04C1J4R7)	4.7μF,±20%,63V		
C41	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C42	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C43	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C44	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C45	Elect,(CE04C1J100)	10μF,±20%,63V		

( ): Manufacturer's part number

* : Selected at factory

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
C46	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C47	Cer,(CC924CH1H330J)	33pF,±5%,50V		
C48	Elect,(CE04C1J100)	10μF,±20%,63V		
C49	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C50	Cer,(RPE111CH121G50)	120pF,±2%,50V		
C51	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C52	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C53	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C54	Elect,(CE04C1J2R2)	2.2μF,±20%,63V		
C55	Elect,(CE04C1A101)	100μF,±20%,10V		
C56	Clect,(CE04C1J2R2)	2.2μF,±20%,63V		
C57	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C58	Cer,(CC924CH1H101J)	100pF,±5%,50V		
C59	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C60	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C61	Cer,(CC924CH1H561J)	560pF,±5%,50V		
C62	Cer,(CC924CH1H561J)	560pF,±5%,50V		
C63	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C64	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C65	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C66	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C67	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C68	Plast,(ECQ-M1H223KZ)	0.022μF,±10%,50V		
C69	Plast,(ECQ-M1H222KZ)	2200pF,±10%,50V		
C70	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C71	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C72	Plast,(ECQ-M1H102KZ)	1000pF,±10%,50V		
C73	Cer,(PRE111CH271G50)	270pF,±2%,50V		
C74	Cer,(CC924CH1H331J)	330pF,±5%,50V		
C75	Not assigned			
C76	Cer,(RPE111CH131G50)	130pF,±2%,50V		
C77	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C78	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C79	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C80	Cer,(CC924CH1H331J)	330pF,±5%,50V		
C81	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C82	Tant,(CS02H1V010M)	1μF,±20%,35V		
C83	Not assigned			
C84	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C85	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C86	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C87	Elect,(CE04C1J100)	10μF,±20%,63V		
C88	Elect,(CE04C1J100)	10μF,±20%,63V		
C89	Not assigned			
C90	Cer,(CC924CH1H331J)	330pF,±5%,50V		
C91	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C92	Cer,(CC924CH1H471J)	470pF,±5%,50V		

( ): Manufacturer's part number

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
C 93	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C 94	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C 95	Cer,(RPE111CH121G50)	120pF,±2%,50V		
C 96	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C 97	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C 98	Not assigned			
C 99	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C100	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C101	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C102	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C103	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C104	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C105	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C106	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C107	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C108	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C109	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C110	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C111	Not assigned			
C112	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C113	Plast,(ECQ-M1H103KZ)	0.01μF,±10%,50V		
C114	Cer,(CC924CH1H221J)	220pF,±5%,50V		
C115	Not assigned			
C116	Elect,(CE04C1J100)	10μF,±20%,63V		
C117	Cer,(CC924CH1H470J)	47pF,±5%,50V		
C118	Cer,(CC924CH1H470J)	47pF,±5%,50V		
C119	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C120	Not assigned			
C121	Cer,(CC924CH1H330J)	33pF,±5%,50V		
C122	Cer,(CC924CH1H560J)	56pF,±5%,50V		
C123	Cer,(CC924CH1H120J)	12pF,±5%,50V		
C124	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C125	Cer,(CC924CH1H471J)	470pF,±5%,50V		
C126	Cer,(CC924CH1H510J)	51pF,±5%,50V		
C127	Elect,(CE04C1A101)	100μF,±20%,10V		
C128	Elect,(CE04C1A101)	100μF,±20%,10V		
C129	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C130	Cer,(CC924CH1H331J)	330pF,±5%,50V		
C131	Cer,(CC924CH1H150J)	15pF,±5%,50V		
C132	Cer,(CC924CH1H620J)	62pF,±5%,50V		
C133	Cer,(CC924CH1H300J)	30pF,±5%,50V		
C134	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C135	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C136	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C137	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C138	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C139	Elect,(CE04C1J2R2)	2.2μF,±20%,63V		

( ): Manufacturer's part number

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
C140	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C141	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C142	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C143	Elect,(CE04C1C331)	330μF,±20%,16V		
C144	Elect,(CE04C1C331)	330μF,±20%,16V		
C145	Elect,(CE04C1J2R2)	2.2μF,±20%,63V		
C146	Elect,(CE04C1A331)	330μF,±20%,10V		
C147	Elect,(CE04C1A331)	330μF,±20%,10V		
C148	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C149	Cer,(RD340CK010CY50)	1pF,±0.25pF,50V		
C150	Cer,(RD340CK010CY50)	1pF,±0.25pF,50V		
C151	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C152	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C153	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V		Q'ty 0 to 3 *
C154	Not assigned			
C155	Not assigned			
C156	Not assigned			
C157	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V		Q'ty 0 to 3, *
C158	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V		Q'ty 0 to 3, *
C159	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V		Q'ty 0 to 3, *
C160	Cer,(CC924CH1H * J)	12 to 470pF,±5%,50V		Q'ty 0 to 3, *
C161	Not assigned			
C162	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C163	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C164	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C165	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C166	Cer,(CC924CH1H * J)	12 to 100pF,±5%,50V		Q'ty 0 to 3, *
C167	Cer,(CC924CH1H * J)	12 to 100pF,±5%,50V		Q'ty 0 to 3, *
C168	Not assigned			
C169	Not assigned			
C170	Cer,(CC924CH1H151J)	150pF,±5%,50V		
C171	Not assigned			
C172	Not assigned			
C173	Cer,(CC924CH1H470J)	47pF,±5%,50V		
C174	Cer,(CC924CH1H * D)	4pF to 10pF, ±0.5pF, 50V		Q'ty 0 to 3, *
	Cer,(CC924CH1H * J)	12pF to 1000pF,±5%, 50V		Q'ty 0 to 3, *
C175	Not assigned			
C176	Not assigned			
C177	Not assigned			
C178	Not assigned			
C179	Not assigned			

( ): Manufacturer's part number

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
C180	Cer,Var,(TZ03P450A)	6.8 to 45pF,100V		
C181	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C182	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C183	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C184	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C185	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C186	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C187	Cer,(CK924C1H104M)	0.1μF,±20%,50V		
C188	Cer,(CK924C1H103M)	0.01μF,±20%,50V		
C189	Cer,(CK924C1H103M)	0.01μF,±20%,50V		
C190	Cer,(CC924CH1H * J)	47 to 470pF,±5%,50V		Q'ty 0 to 3, *
C191	Cer,(CK924CH222M)	2200pF,±20%,50V		
C192	Cer,(CC924CH1H102J)	1000pF,±5%,50V		
C193	Cer,(CK924C1H104M)	0.1μF,±20%,50V		Q'ty 6
J 1	Connector,(DF1-10P-2.5DSA)			
J 2	Connector,(HIF3-16P-2.54DSA)			
J 3	Connector,(HIF3-34P-2.54DSA)			
J 4	Not assigned			
J 5	Not assigned			
J 6	Connector,(27DP-R-PC)			
J 7	Connector,(27DP-R-PC)			
J 8	Connector,(HIF3-34P-2.54DSA)			
L 1	Coil,(339T20174D)	8.53μH		
L 2	Coil,(442T40365D)	0.85μH		
L 3	Coil,(LF8-220K)	22μH		
L 4	Coil,(LF8-220K)	22μH		
L 5	Coil,(LV1-100)	10μH		
L 6	Coil,(LF8-220K)	22μH		
L 7	Coil,(LV1-6R8)	6.8μH		
L 8	Coil,(LV1-6R8)	6.8μH		
L 9	Coil,(LF8-220K)	22μH		
L 10	Coil,(LF8-220K)	22μH		
L 11	Coil,(LV1-220)	22μH		
L 12	Coil,(LV1-220)	22μH		
L 13	Coil,(LV1-330)	33μH		
L 14	Coil,(LV1-330)	33μH		
L 15	Coil,(LF8-220K)	22μH		

( ): Manufacturer's part number

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
L 16	Coil,(LF8-220K)	22μH		
L 17	Coil,(LV1-1R5)	1.5μH		
L 18	Coil,(LF8-220K)	22μH		
L 19	Not assigned			
L 20	Coil,(LF8-220K)	22μH		
L 21	Coil,(LF8-220K)	22μH		
L 22	Coil,(LV1-100)	10μH		
L 23	Coil,(LV1-100)	10μH		
L 24	Coil,(LV1-4R7)	4.7μH		
L 25	Not assigned			
L 26	Not assigned			
L 27	Coil,(LV1-150)	15μH		
L 28	Coil,(LV1-150)	15μH		
Q 1	Tr,(2SC943)			
Q 2	Tr,(2SC943)			
Q 3	Tr,(2SC943)			
Q 4	FET,(3SK28)			
Q 5	Tr,(2SC943)			
Q 6	Tr,(2SC943)			
Q 7	Not assigned			
Q 8	Not assigned			
Q 9	Not assigned			
Q 10	Not assigned			
Q 11	Tr,(2SC943)			
Q 12	IC,(μPC91A)			
Q 13	IC,(μPC91A)			
Q 14	Tr,(2SC943)			
Q 15	Tr,(2SC97A)			
Q 16	Tr,(2SC97A)			
Q 17	Tr,(2SC1044)			
Q 18	Tr,(2SC1044)			
Q 19	Tr,(2SC943)			
Q 20	Tr,(2SC943)			
Q 21	Di,breakdown,(RD5.1E)	4.8 to 5.37V,400mW		
Q 22	Not assigned			
Q 23	Not assigned			
Q 24	Not assigned			
Q 25	Not assigned			
Q 26	Not assigned			
Q 27	Not assigned			
Q 28	Not assigned			
Q 29	Not assigned			
Q 30	Tr,(2SC943)			

( ): Manufacturer's part number

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
Q 31	Tr,(2SC943)			
Q 32	Tr,(2SC943)			
Q 33	Tr,(2SC943)			
Q 34	Tr,(2SC943)			
Q 35	Tr,(2SC943)			
Q 36	Di,(1S953)			
Q 37	Di,(1S953)			
Q 38	Di,(1S953)			
Q 39	Di,(1S953)			
Q 40	Tr,(2SC943)			
Q 41	Tr,(2SC943)			
Q 42	Di,(1S953)			
Q 43	Di,(1S953)			
Q 44	Tr,(2SC943)			
Q 45	Tr,(2SC943)			
Q 46	Di,(1S953)			
Q 47	Tr,(2SC943)			
Q 48	Tr,(2SC943)			
Q 49	Not assigned			
Q 50	Not assigned			
Q 51	Di,varicap,(FC51M)			
Q 52	Tr,(2SC943)			
Q 53	Tr,(2SC943)			
Q 54	IC,(MC1496P)			
Q 55	Di,breakdown,(RD9.1E)	8.29 to 9.3V,400mW		
Q 56	IC,(μPC159A)			
Q 57	Di,(1S953)			
Q 58	Di,(1S953)			
Q 59	Di,(1S953)			
Q 60	Not assigned			
Q 61	Not assigned			
Q 62	Tr,(2SC943)			
Q 63	Tr,(2SC943)			
Q 64	IC,(μPC71A)			
Q 65	Tr,(2SC97A)			
Q 66	Tr,(2SC943)			
Q 67	Tr,(2SC943)			
Q 68	Tr,(2SC943)			
Q 69	Tr,(2SC943)			
Q 70	Tr,(2SC943)			
Q 71	IC,(AM686CN)			
Q 72	IC,(μPC71A)			
Q 73	IC,(μPC71A)			
Q 74	IC,(AM686CN)			
Q 75	IC,(74S00)			

( ): Manufacturer's part number

* : Selected at factory

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
Q 76	IC,(74S04)			
Q 77	IC,(74S00)			
Q 78	IC,(74S10)			
Q 79	IC,(74S00)			
Q 80	IC,(74S04)			
Q 81	IC,(74S00)			
Q 82	IC,(74S10)			
Q 83	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q 84	Tr,(2SC1044)			
Q 85	Tr,(2SC1044)			
Q 86	IC,(μPC91A)			
Q 87	IC,(μPC91A)			
Q 88	Tr,(2SA603)			
Q 89	IC,(μPC159A)			
Q 90	IC,(μPC159A)			
Q 91	IC,(TC4051BP)			
Q 92	IC,(TC4051BP)			
Q 93	IC,(μPC91A)			
Q 94	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q 95	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q 96	IC,(7407)			
Q 97	IC,(7406)			
Q 98	IC,(μPC177C)			
Q 99	IC,(μPC177C)			
Q100	Not assigned			
Q101	Di,breakdown,(RD5.1E)	4.8 to 5.37V,400mW		
Q102	Di,breakdown,(RD3.9E)	3.7 to 4.16V,400mW		
Q103	IC,(μPC16305H)			
Q104	IC,(HD10124)			
Q105	IC,(SHM-HUMC)			
Q106	IC,(LH0033CG)			
Q107	IC,(ADC816MC)			
Q108	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q109	Not assigned			
Q110	Di,(1S953)			
Q111	Di,(1S953)			
Q112	Di,(1S953)			
Q113	D8,(1S953)			
Q114	Tr,(2SC943)			
Q115	Tr,(2SA603)			
Q116	Not assigned			
Q117	Not assigned			
Q118	Not assigned			
Q119	Not assigned			
Q120	IC,(74LS367)			

( ): Manufacturer's part number

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
Q121	IC,(74LS367)			
Q122	IC,(μPC14305H)			
Q123	Di,(1S953)			
Q124	Not assigned			
Q125	Not assigned			
Q126	Not assigned			
Q127	Not assigned			
Q128	Not assigned			
Q129	Not assigned			
Q130	IC,(μPC78L05)			
Q131	IC,(μPC78L05)			
Q132	IC,(μPC78L05)			
Q133	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q134	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q135	Di,breakdown,(RD6.2E)	5.78 to 6.44V,400mW		
Q136	IC,(74S00)			
Q137	Tr,(2SC943)			
Q138	IC,(AM686CN)			
R 1	CF,(RD1/4PX 75ΩD)	75Ω,±0.5%,1/4W		
R 2	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R 3	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 4	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R 5	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R 6	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R 7	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 8	Not assigned			
R 9	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 10	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R 11	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R 12	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R 13	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R 14	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R 15	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R 16	Not assigned			
R 17	Not assigned			
R 18	Not assigned			
R 19	Not assigned			
R 20	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R 21	CF,(ARD25T153J)	15kΩ,±5%,1/4W		

( ): Manufacturer's part number

* : Selected at factory

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R22	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R23	CF,(ARD25T * J)	68Ω to 10kΩ,±5%,1/4W		Q'ty 1 to 3 *, Parallel
R24	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R25	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R26	Var,MF,(RJ-6P 100Ω)	100Ω,1/2W		
R27	Not assigned			
R28	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R29	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R30	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R31	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R32	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R33	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R34	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R35	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R36	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R37	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R38	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R39	Var.MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R40	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R41	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R42	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R43	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R44	CF,(ARD25T391J)	390Ω,±5%,1/4W		
R45	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R46	CF,(ARD25T * J)	4.7Ω to 1kΩ,±5%,1/4W		Q'ty 0 to 2, *
R47	CF,(ARD25T821J)	820Ω,±5%,1/4W		
R48	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R49	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R50	CF,(ARD25T750J)	75Ω,±5%,1/4W		
R51	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R52	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R53	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R54 to R67	Not assigned			
R68	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R69	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R70	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R71	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R72	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R73	Not assigned			
R74	Not assigned			
R75	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R76	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R77	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R78	CF,(ARD25T680J)	68Ω,±5%,1/4W		

( ): Manufacturer's part number

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R79	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R80	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R81	CF,(ARD25T391J)	390Ω,±5%,1/4W		
R82	Not assigned			
R83	Not assigned			
R84	Not assigned			
R85	CF,(ARD25T271J)	270Ω,±5%,1/4W		
R86	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R87	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R88	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R89	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R90	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R91	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R92	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R93	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R94	Not assigned			
R95	Not assigned			
R96	Not assigned			
R97	Not assigned			
R98	Not assigned			
R99	Not assigned			
R100	Not assigned			
R101	CF,(ARD25T560J)	56Ω,±5%,1/4W		
R102	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R103	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R104	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R105	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R106	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R107	CF,(ARD25T223J)	22kΩ,±5%,1/4W		
R108	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R109	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R110	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R111	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R112	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R113	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R114	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R115	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R116	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R117	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R118	Not assigned			
R119	Not assigned			
R120	Not assigned			
R121	Not assigned			
R122	Not assigned			
R123	Not assigned			
R124	Not assigned			
R125	Not assigned			

( ): Manufacturer's part number

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R126	CF,(ARD25T104J)	100kΩ,±5%,1/4W		
R127	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R128	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R129	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W		
R130	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R131	CF,(ARD25T183J)	18kΩ,±5%,1/4W		
R132	CF,(ARD25T471J)	470Ω,±5%,1/4W		
R133	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R134	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R135	Var,MF,(RJ-6P 100Ω)	100Ω,1/2W		
R136	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W		
R137	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R138	CF,(ARD25T510J)	51Ω,±5%,1/4W		
R139	CF,(ARD25T151J)	150Ω,±5%,1/4W		
R140	CF,(ARD25T121J)	120Ω,±5%,1/4W		
R141	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W		
R142	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W		
R143	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R144	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R145	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R146	Var,MF,(RJ-6P 2kΩ)	2kΩ,1/2W		
R147	Not assigned			
R148	Not assigned			
R149	Not assigned			
R150	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R151	Var,MF,(RD-6P 10kΩ)	10kΩ,1/2W		
R152	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R153	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R154	CF,(ARD25T105J)	1MΩ,±5%,1/4W		
R155	CF,(ARD25T105J)	1MΩ,±5%,1/4W		
R156	CF,(ARD25T473J)	47kΩ,±5%,1/4W		
R157	CF,(ARD25T105J)	1MΩ,±5%,1/4W		
R158	Not assigned			
R159	Not assigned			
R160	Not assigned			
R161	Not assigned			
R162	Not assigned			
R163	Not assigned			
R164	Not assigned			
R165	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W		
R166	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W		
R167	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R168	Not assigned			
R169	Not assigned			
R170	Not assigned			
R171	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R172	CF,(ARD25T153J)	15kΩ,±5%,1/4W		

( ): Manufacturer's part number

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R173	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R174	CF,(ARD25T181J)	180Ω,±5%,1/4W		
R175	Not assigned			
R176	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R177	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R178	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R179	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R180	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R181	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R182	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R183	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R184	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R185	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R186	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R187	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R188	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R189	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R190	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R191	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R192	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R193	Var.MF,(RF-6P 5kΩ)	5kΩ,1/2W		
R194	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W		
R195	Not assigned			
R196	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R197	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R198	CF,(ARD25T221J)	220Ω,±5%,1/4W		
R199	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R200	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W		
R201	Not assigned			
R202	Not assigned			
R203	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R204	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R205	CF,(ARD25T680J)	68Ω,±5%,1/4W		
R206	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R207	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R208	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R209	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R210	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R211	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R212	CF,(ARD25T561J)	560Ω,±5%,1/4W		
R213	CF,(ARD25T601J)	600Ω,±5%,1/4W		
R214	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R215	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R216	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R217	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R218	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R219	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W		

( ): Manufacturer's part number

* : Selected at factory

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R220	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R221	CF,(ARD25T * J)	220Ω, to 1kΩ,±5%, 1/4W		Q'ty 1 to 3, *
R222	CF,(ARD25T821J)	820Ω,±5%,1/4W		
R223	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R224	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R225	CF,(ARD25T182J)	1.8kΩ,±5%,1/4W		
R226	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W		
R227	CF,(ARD25T561J)	560Ω,±5%,1/4W		
R228	CF,(ARD25T392J)	3.9kΩ,±5%,1/4W		
R229	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R230	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R231	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R232	Var.MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R233	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W		
R234	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W		
R235	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R236	MF,(RN14K2H222J)	2.2kΩ,±5%,1/2W		
R237	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W		
R238	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R239	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R240	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R241	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R242	Not assigned			
R243	Not assigned			
R244	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R245	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R246	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R247	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R248	Not assigned			
R249	Not assigned			
R250	Not assigned			
R251	MF,(RN14K2E3480D)	348Ω,±0.5%,1/4W		
R252	MF,(RN14K2E2370D)	237Ω,±0.5%,1/4W		
R253	MF,(RN14K2E3480D)	348Ω,±0.5%,1/4W		
R254	MF,(RN14K2E2370D)	237Ω,±0.5%,1/4W		
R255	Var,MF,(RJ-6P 100Ω)	100Ω,1/2W		
R256	CF,(ARD25T101J)	100Ω,±5%,1/4W		
R257	Var,MF,(RJ-6P 100Ω)	100Ω,1/2W		
R258	Var,MF,(RJ-6P 100Ω)	100Ω,1/2W		
R259	CF,(ARD25T511J)	510Ω,±5%,1/4W		
R260	CF,(ARD25T511J)	510Ω,±5%,1/4W		
R261	Not assigned			
R262	Not assigned			
R263	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R264	CF,(ARD25T681J)	680Ω,±5%,1/4W		
R265	CF,(ARD25T681J)	680Ω,±5%,1/4W		

( ): Manufacturer's part number

Table 7-17 COMPONENT LIST OF ANALOG BOARD (II), (PAL)

CKT REF	DESCRIPTION	RATING		NOTE
R266 to R285	Not assigned			
R286	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R287	Not assigned			
R288	Not assigned			
R289	CF,(ARD25T331J)	330Ω,±5%,1/4W		
R290	Not assigned			
R291	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R292	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R293	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R294	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R295	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R296	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R297	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R298	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R299	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R300	Var,MF,(RJ-6P 20kΩ)	20kΩ,1/2W		
R301	Not assigned			
R302	Not assigned			
R303	Not assigned			
R304	Not assigned			
R305	Not assigned			
R306	CF,(ARD25T333J)	33kΩ,±5%,1/4W		
R307	CF,(ARD25T153J)	15kΩ,±5%,1/4W		
R308	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R309	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W		
R310	Var.MF,(RJ-6P 5kΩ)	5kΩ,1/2W		
R311	Not assigned			
R312	Not assigned			
R313	CF,(ARD25T4R7J)	4.7Ω,±5%,1/4W		
R314	CF,(ARD25T4R7J)	4.7Ω,±5%,1/4W		
R315	CF,(ARD25T4R7J)	4.7Ω,±5%,1/4W		
R316	CF,(ARD25T4R7J)	4.7Ω,±5%,1/4W		
R317	Not assigned			
R318	Not assigned			
R319	Not assigned			
R320	Not assigned			
R321	Not assigned			
R322	Not assigned			
R323	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R324	CF,(ARD25T103J)	10kΩ,±5%,1/4W		
R325	CF,(ARD25T102J)	1kΩ,±5%,1/4W		
R326	CF,(ARD25T221J)	220Ω,±5%,1/4W		
X 1	XTAL OSC,(44X62727B)	4.433618 MHz		

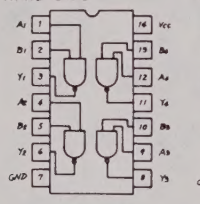
( ): Manufacturer's part number

* : Selected at factory

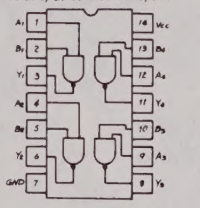
Appendix A

IC LOGIC DIAGRAMS

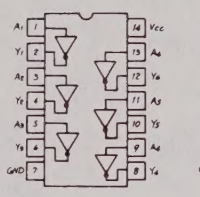
SN74LS00N
μPB201C. D
Quadruple 2-input Positive NAND Gates



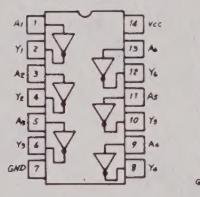
SN74LS03N
Quadruple 2-input Positive NAND Gates (with Open Collector Output)



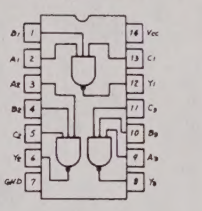
SN74LS04N
Hex Inverters



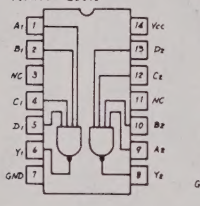
SN74LS05N
Hex Inverters (with Open Collector Output)



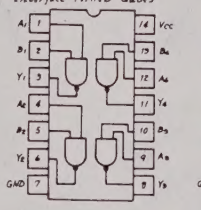
SN74LS10N
Tripple 3-input Positive NAND Gates



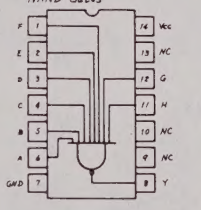
SN74LS20N
Dual 4-input Positive NAND Gates



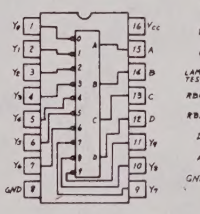
SN7426N
Quadruple 2-input High-Voltage Interface NAND Gates



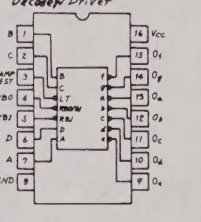
SN74LS30N
8-input Positive NAND Gates



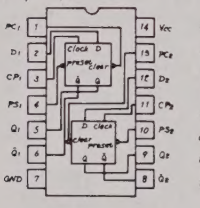
SN74LS42N
BCD-to-Decimal Decoder



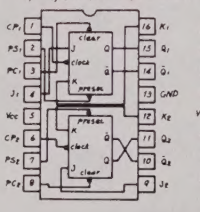
SN74LS47N
BCD-to-Seven Segment Decoder/Driver



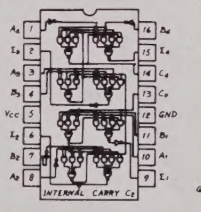
SN74LS74AN
Dual D-type Edge-Triggerd Flip Flops



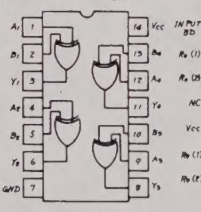
SN74LS76N
Dual J-K Master-Slave Flip Flops (with Preset and Clear)



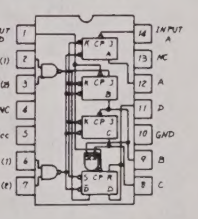
SN74LS83AN
4-bit Binary Full Adder



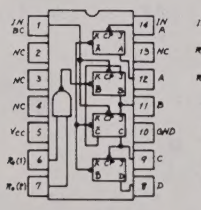
SN74LS86N
Quadruple 2-input Exclusive-OR Gates



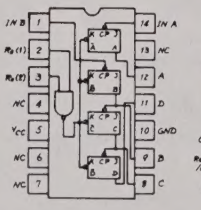
SN74LS90N
Decade Counter



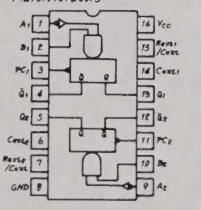
SN74LS92N
Divided-by-Twelve Counter



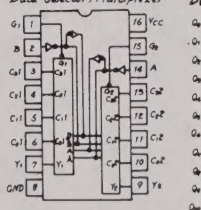
SN74LS93N
4-bit Binary Counter



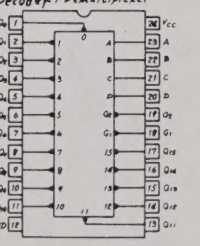
SN74LS123N
Dual Retriggerable Monostable Multivibrators



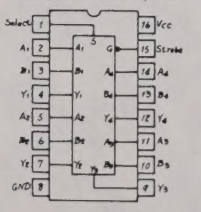
SN74LS153N
Dual 4-line-to-1-line Data Selector/Multiplexer



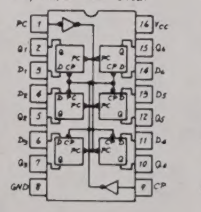
HD74154P
4-line-to-16-line (1 of 16) Decoder/Demultiplexer



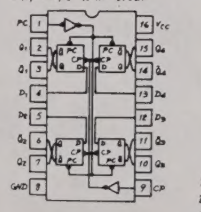
SN74LS157N
Quadruple 2-line-to-1-line Data Selectors/Multiplexers



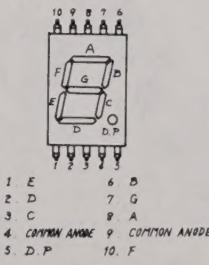
SN74LS174N
Hex/Quadruple D-type Flip Flops with Clear



SN74LS175N
Hex/Quadruple D-type Flip Flops with Clear



SN713A
7-segment LED



1. E
2. D
3. C
4. COMMON ANODE
5. D.P
6. B
7. G
8. A
9. COMMON ANODE
10. F

SN74** series IC has perfect compatibility with HD74** series IC. In this Set these ICs may be mixed up and in this case SN74** series is indicated instead of HD74** series in this Manual. Example SN74LS04N; HD74LS04P

Fig. A-1 IC LOGIC DIAGRAMS

ACCOPRESS®

25070	YELLOW
25071	BLACK
25072	LIGHT BLUE
25073	DARK BLUE
25074	LIGHT GRAY
25075	LIGHT GREEN
25076	DARK GREEN
25077	TANGERINE
25078	RED
25079	EXECUTIVE RED

WITH WATER RESISTANT
PRESSTEX® COVERS

ACCO.
ACCO INTERNATIONAL INC.
CHICAGO, ILLINOIS 60619

MP MASTER
MA35869